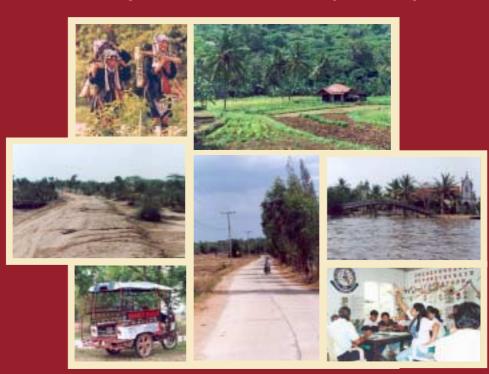
Improving Access in Rural Areas

Guidelines for Integrated Rural Accessibility Planning



Chris Donnges



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Chris Donnges

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ccess is an important factor in rural development. People need to have adequate access to water, energy, land, health services, education, transport services and markets. A lack of access limits the opportunity that people have to improve and sustain their social and economic well being. Improving access and reducing poverty are correlated. A lack of access is perceived as one of the main underlying factors of poverty, particularly in rural areas in developing countries.

The ILO has been involved in developing a planning process for improving access in rural areas designed for application at the local government level. This approach is called "Integrated Rural Accessibility Planning" or "IRAP". IRAP simultaneously seeks to improve the rural transport system and distribution of facilities and services. The objective of the process is to - in a costeffective way - improve access to goods and services in rural areas, in particular for poor and disadvantaged communities. IRAP introduces a set of planning tools

Preface

which are based on access needs of rural people and seek to maximize the use of local resources. Its main features are its simplicity, user friendliness, low-cost application and immediate outputs. Local planners can make use of the tools, as part of their routine planning activities, to define priorities for different sectors and communities. The process enables the planner to quickly assess what should be done where and identify rural infrastructure investment priorities.

These guidelines describe the Integrated Rural Accessibility Planning (IRAP) process. IRAP is currently being applied in around 15 countries around the world. The process is not uniform in these countries and depends on local characteristics. These guidelines attempt to describe a generic IRAP process. They have been produced to guide the development of the process within the context of a particular country.

The first country specific guidelines on IRAP were produced in 1992 in the Philippines. IRAP country specific guidelines for Laos were produced in 1999 and an IRAP guide was prepared for Malawi in 2000. The development of country specific guidelines is ongoing at the time of this writing in a number of Asian and African countries and recently guidelines have been translated into Spanish. There are plans to produce a guideline in French as well.

March 2003

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Rural Access

****Background**

It was agreed during the UN Social Summit in Copenhagen in 1995 to halve the incidence of poverty between 1995 and 2015. As a result, poverty alleviation strategies returned to the forefront of the agenda's of most donor agencies and development banks. Despite development gains in some areas, the world is still home to 1.1 billion extremely poor people. Projects of the development banks and bilateral donors have to increasingly show that they directly or indirectly benefit these poor people.

To help people out of their impoverishment is indeed one of the world's greatest challenges. Often, people are caught in a so-called poverty trap: people are poor because they have no education (lack of opportunities); poor people can not afford proper education for their kids who, in turn, will become poor uneducated adults and so on. It is an immense challenge to break this cycle. Poverty also is a crosscutting issue that has many causes and effects. There is no single

solution to alleviating poverty.

Poverty reduction strategies need to take these different causes of poverty into account. It is therefore useful to distinguish between transient poverty, structural poverty and chronic poverty. Each concept requires a somewhat different treatment. Transient poverty is the result of sudden shocks such as wars, financial crises, or natural disasters. Structural poverty is basically due to a lack of opportunity. It affects people who are disconnected from the wider economy and society and is often geographically focussed. The provision of infrastructure and services is key to overcoming structural poverty. Chronic poverty may be due to a number of disabling factors at the individual or household level. including dependency, gender, caste or indigenous minority status, and physical or mental disability 12.

This paragraph has taken the Asian Development Bank's classification of poverty as described in the report "Assessing the impact of transport and energy infrastructure on poverty reduction (ADB 2001)".

² These guidelines on Integrated Rural Accessibility Planning present a strategy to overcome structural poverty. Wherever from here on the word poverty is used it refers to structural poverty.

As indicated above, poverty is the result of development difficulties. Certainly a key element of poverty is isolation expressed as the lack of access people have to basic, social and economic goods, facilities and opportunities. This isolation, or a lack of opportunity, cuts across different development sectors and should be dealt with in an integrated manner.

These guidelines will focus on physical accessibility, defined as the degree of difficulty people or communities have in accessing locations for satisfying their basic social and economic needs such as food production, water collection, firewood collection, education, primary health care, trading and transport. It will introduce a technique developed over the last 10 years by the International Labour Organization to identify and prioritize interventions that will improve accessibility in rural areas.

A History to Integrated Rural Accessibility Planning (IRAP)

Aid assisted development started in the 1960s. In the first "aid"



decades most resources were allocated to develop and improve large-scale infrastructure such as the national road network. primary health and education facilities and, more commonly, the economy at large. Investments were often biased towards the urban and already more developed areas. Investments in rural areas that would benefit the rural people often received a second priority. In terms of road infrastructure for example, not much was initially done to improve the rural transport networks. The primary road network, understandably, received the highest priority. After the primary road networks were reasonably well established, the attention shifted gradually towards the rural road network. Rural roads were seen as the conduits that could facilitate rural development. Access in rural areas was often poor and existing roads were frequently impassable during the rainy season, limiting transport services and restraining access and therefore constraining development.

In the late 80s, there was a growing awareness that the transport policy and road programs of that time aiming at improving access in rural areas were often too narrowly focussed on a "conventional highway and car" solution. In addition, it appeared that decision making was often overly centralized, providing the wrong interventions in the wrong places often using inappropriate technology.

A different approach seemed necessary, one that could effectively address rural access problems, reduce isolation and alleviate poverty. Research work on rural transport, initiated by the ILO, was brought together in a book "Rural Transport in Developing Countries" published in 1985. This book was important in that it marked a new approach towards rural transport in general and induced a rural transport planning discipline³. Initially the objective of this methodology named Integrated Rural Transport Planning (IRTP) was to identify transport patterns of rural households and identify their transport needs. The key features of IRTP were:

- the starting point of rural transport planning had to be the real transport needs of the rural people;
- in identifying interventions to improve rural transport one should consider the following options:
 - the development of the road network;
 - improvement of the village level transport network including paths, tracks and footbridges;
 - development of transport services
 - increased use of Intermediate Means of Transport (IMT)

The groundwork laid during the second half of the eighties on these different aspects of rural

transport 4 was integrated and developed into a number of pilot projects for Asia and Africa. Although sharing the overall goal of improving rural accessibility, the different projects had somewhat different objectives, strategies and activities. In Asia the main emphasis was on developing a decentralized access planning methodology and capacity building for access planning at the local Government level. In Africa the emphasis was less on capacity building and more on identifying, implementing and pilot-testing interventions to improve rural transport.

It appeared that improved mobility and accessibility in rural areas could be achieved through:

- 1. The development of a local transport infrastructure
- 2. The enhancement of rural transport services
- 3. The use of IMT
- The provision of facilities which would reduce transport needs

In the early 1990s, experts working with the pilot projects in Asia agreed that the original objectives of the exercise had changed and that the scope of the methodology had become wider. It no longer focussed on transport alone but also on complementary

³ Rural Transport in Developing Countries - Ian Barwell, Edmonds, G.A.., Howe, J.D.G.F. and de Veen J. (London 1985) Intermediate Technology Publications

⁴ Various research studies in Africa and Asia plus the Makete Rural Transport Programme in Tanzania and the Rural Access project in the Philippines as the main operational programme on rural transport

non-transport interventions to reduce the need for transport. It was decided to replace the old acronym (IRTP = Integrated Rural Transport Planning) with a new acronym (IRAP = Integrated Rural Accessibility Planning). A new methodology for rural access planning had been developed. Over the years, IRAP developed into a set of comprehensive planning procedures that look at access, transport and mobility from a broader perspective. IRAP has become a tool for rural access planning that is used by local Governments and development organizations alike. It promotes community participation and the optimum use of local resources including labour.

Before carrying on with the technical chapters of these guidelines it is essential to briefly introduce three issues that are of significance for the IRAP methodology:

- Linkages between transport, access and poverty
- Local investment planning
- Local participation

Rural Transport, Accessibility and Poverty

The role of transport is to facilitate the access people have to goods, services and facilities. Improving transport reduces isolation. People need to have access to a wide variety of goods, services and facilities in order to live an economic and social

productive life. Improved transport results in faster, safer, cheaper, more reliable and more comfortable (less spoilage) travel of people and products. This is most often done by the construction of road infrastructure. anticipating a response (private or public) to use the road 5. The ILO defines transport as "the movement of people and goods by any conceivable means, for any conceivable purpose"⁶. The World Bank defines transport as the activity linking people to places and resources. It is obvious that transport is an intermediate activity and not an objective in itself.

Transport patterns in developing countries and developed countries, in urban areas and rural areas differ substantially. Research work in several African and Asian countries revealed that rural transport in developing countries has its own very distinct features. It is characterized by people moving around in rural areas for a variety of subsistence. social and economic purposes. Some of the transport takes place on foot and much of it is in and around the community away from the main road network.

If transport is the means to improve mobility of the people to gain access to the goods, services and facilities they need, then planning for rural transport should not overlook the option of nonroad interventions. This would include transport services, IMTs and village infrastructure (paths, tracks, trails, footbridges etc.) to

improve mobility and hence accessibility.

Obviously, improving transport to enhance mobility is only one of the means to improve access. One author determined that "the heart of the problem is accessibility, determined by the location of different points of satisfaction on the one hand, and on the other by people's ability to reach these points (the notions of transport and mobility). Accessibility can be defined in terms of ease (in terms of time, effort and cost) with which a need can be satisfied" ...and... "that transport is in reality a means to an end, and that the end is gaining access 7 ".

Rural access can be defined as the ability, the level of difficulty, of rural people to use, reach or obtain the necessary facilities, goods and services. Access is inversely related to the time, effort and cost necessary to reach locations where one could avail over these goods and services.

Accessibility has three elements:

- 1. the location of the households:
- 2. the location of the facilities and services:
- 3. the transport system to bring 1 and 2 together.

The objectives of rural access planning therefore should be to, in a cost-effective manner, improve the access to the facili-

ties, goods and services that rural communities need for their social and economic development. Improvements could include interventions that effectively enhance mobility of rural dwellers from rural roads to intermediate means of transport (IMT) as well as interventions that bring the facilities, goods and services closer to the people such as schools, health centers, markets and improved water supplies.

It is commonly acknowledged that a lack of access is a major contributing factor to poverty. It is however only one of the constraints to poverty alleviation. It is a difficult task to single out "access" and to point out to what extent it constrains development. Research however has shown that a causal relationship exists between access and poverty. A lack of access generally means isolation and isolation often induces poverty.

The following excerpts illustrate the importance of access in economic development:

"Isolation is a major constraint to development. Isolation sustains poverty, because services do not reach those that are isolated

⁵ Guidelines Rural Transport Planning - David Tighe, Tom Strandberg (Geneva 1994) ILO

⁶ Accessibility Planning and Local Development -Kanyama Dixon Fyle (Geneva 1998) ILO - Rural Accessibility Technical Papers No. 2

Accessibility Planning and Local Development -Kanyama Dixon Fyle (Geneva 1998) ILO - Rural Accessibility Technical Papers No. 2

keeping them illiterate and out of contact of income-generating activities. Accessibility can be seen as the contrary to isolation, is defined by Jones (1981) as the opportunity that an individual at a given location possesses to take part in a particular activity or set of activities 8 " and "Access therefore seems to be a factor in the level of poverty. In the first place it is related at the most basic level of living. If there is no access to health services then people will remain unhealthy. children will die and any epidemic will have catastrophic results. If there is no access to basic information the household will be unaware of technology and information that could assist them in their daily lives. If access to education is limited then succeeding generations will remain at the same level of lack of knowledge".

The author goes on to say that "Access is also related to poverty at a different level. Even if access to the basic needs of life are assured, people need to become part of the economy if they are to develop. If there is no access to markets, farmers cannot sell their surplus crops. If they do not have access to information, they cannot learn of ways of improving either their skills or their productivity 9"

The international community has committed itself to "attack poverty". The World Bank, the Asian Development Bank, the United Nations and other major donors are all developing strate-

gies, country frameworks and development assistance programmes to assist countries to eradicate poverty. Rural transport has an important role in this effort in that it provides rural poor with access to the basic, social and economic goods, facilities and opportunities required for people to build up and sustain their assets. A recent study commissioned by the World Bank and DFID remarks "transport conditions impinge on the poor, and their opportunities for livelihood enhancement, in a host of direct and indirect ways. At one extreme, investments in transport can create economic and other opportunities for the poor in a very direct fashion, by providing employment in construction or enhancing the mobility of members of a household. At the other extreme, they may be equally relevant to reducing poverty because of their effects on the general conditions that enable a process of sustained economic growth to occur, indirectly enhancing opportunities for poor people".

It is this last reference that summarizes the potential impact of rural transport on poverty. On the micro-level, at the household level, it directly contributes to improved mobility, increased access and sometimes employment and income while at the meso-level, at the local economy level, it indirectly contributes if improved transport results in economic growth. Although, as was stressed earlier, the latter does not necessarily imply that the rural poor actually benefit

from economic growth unless this growth is pro-poor.

Rural access, transport and poverty are inter-linked. Rural access can be improved through the provision of rural infrastructure and the improvement of rural transport. Access is the goal while infrastructure and transport are interventions to reach this goal.

Local Investment Planning

One of the recent trends in many countries in the Asia Pacific region is the transfer of development responsibilities to local governments. This requires efforts to strengthen local capacity for planning, implementation and monitoring to enable a more rational allocation of scarce resources according to real priorities. This decentralization process is well underway in for example the Philippines and India and more recently initiated in countries such as Thailand (1999), Indonesia (2000), Nepal (1999), Cambodia (1999) and Laos (2000).

The decentralization process is strongly supported by the main donors in the region. The World Bank, according to its "World Development Report 1999-2000: Entering the 21st Century", sees "localization" as a major new trend in 21st century. It defines localization as the growing power of sub-national entities such as cities and provinces in response to a grass-roots drive by people for a larger say in their government and institutions. In its 2000/2001 World Development Report,

Attacking Poverty, the Bank identifies the empowerment of communities and local organizations (local governments) as one of its three main strategies for development.

The Asian Development Bank identifies, in their Poverty Reduction Strategy, as one of the main strategies for poverty reduction the fact that ..." authority for provision of public services should be devolved to the lowest appropriate level of government." ... , and cites that ..." the long term objective, however, should be to empower the poor and develop institutional arrangements that foster participation and accountability at the local level".

Two out of UNDP's four focal areas for development assistance relate to Good Governance and Poverty Alleviation and various UNDP supported projects strengthen institutions and capacity at the local level for improved service delivery and socio-economic management. DFID, as an example of the bilateral donors, sees the improvement of the transport sector as an important contribution to delivering sustainable development and focuses on encouraging policy makers to allocate resources efficiently and on helping to build local capacity for effective management and implementation.

⁸ Guidelines Rural Transport Planning - David Tighe, Tom Strandberg (Geneva 1994) ILO

⁹ Wasted Time: The Price of Poor Access - Geoff Edmonds (Geneva 1998) ILO - Rural Accessibility Technical Papers No. 3

The conventional approach to infrastructure planning has been sectorial, top-down and non-participatory. This is probably correct for larger infrastructure works such as airports, hospitals and highways but is not very appropriate for the development of rural infrastructure.

It is now generally believed that local Government is indeed better suited to provide and manage rural infrastructure compared to their counterparts at the central level. From the local Government perspective a major issue in rural development is that of investment choices. With the limited resources at their disposal it is important to choose the best possible investment projects and to ensure that the resources are used in the most cost-effective manner. In order to carry out these responsibilities a minimum level of capacity and proper procedures and techniques are required. Local Governments are advantaged in that they have direct contact with the people. they are physically closer to the communities, and are in a better position to facilitate the organization of villages and to improve their technical capabilities to perform certain tasks. Amonast the issues to be addressed to effectively transfer responsibilities to local Governments are:

- The development of proper planning and management systems (methodologies, procedures);
- 2. The enhancement of capacity

at the local level to plan and manage rural infrastructure;

3. Funding availability.

One of the first decentralized functions is often the responsibility for rural infrastructure development. This relates to the identification of investment needs and allocation of scarce resources for infrastructure development such as rural roads, water supplies, schools, health centers and markets.

Local investment planning, within the present context, is therefore defined as the local identification of priorities and local allocation of funds. In addressing the issue of developing the local capacity to execute these tasks in a particular country to improve rural access for example, it is necessary to first analyze the specific responsibilities of the different institutions. It is then necessary to undertake training needs assessment in order to develop a plan to strengthen capacity at the local level for the (new) tasks entrusted to the local institutions.

In terms of responsibilities it is usually sufficient to differentiate between government - national, provincial and district - and the private sector - communities, contractors and private enterprises. The capacity building exercise should primarily target local governments and the local private sector implementing works on behalf of the public sector. It is necessary to identify

different responsibilities and to develop a programme not only to capacitate the different stakeholders but also to stimulate an enabling environment for the decentralization process.

The availability of finance is more of a political issue, which has to be dealt with as well but on a different occasion. It is controversially to notice that in most countries local governments are increasingly assigned responsibilities for planning and maintenance however financially they still remain dependent on fund transfers from the National government.

Participation

Top-down planning of small-scale rural infrastructure projects without consulting the beneficiary communities has often proven to be an ineffective approach and may result in ineffective projects and a waste of resources. Rural infrastructure projects should address the real access needs of the local people and should optimize the use of local resources from a cost perspective. To the extent possible, they should be planned, designed, implemented and maintained with participation from the communities.

Participation is a process whereby beneficiaries (stakeholders) influence the development, direction and execution of strategies, programs and projects rather than merely receiving a share of the benefits. It has been demonstrated time after time



that communities are perfectly able to identify their real problems and to define interventions that are best suited to their real needs.

A case study on best practices in community-based rural infrastructure planning, commissioned by ESCAP, concluded 10 "that the taking of responsibility by people for their own development is a better way to achieve improvements in economic and social conditions, and it is more likely to be successful, cost effective and sustainable. This way of organizing development is appropriate because it:

- Gives local people a direct and active stake in organizing themselves to develop their areas economies
- Encourages the mobilization of local resources such as land, labor, savings, assets, plus indigenous knowledge of specific local conditions such

¹⁰ ESCAP Reducing Poverty by Improving Accessibility



- as environmental and sociocultural norms
- Helps build the capacity of the people to effectively plan and implement projects
- Increases community control over resources and development and promote greater self reliance
- Enhances the sense of community ownership needed to ensure maintenance of completed projects
- Encourages more equitable distribution of benefits because project management is accountable to a more representative community"

Effective community participation requires communities "ready" to participate and government departments and agencies "ready" to work with communities and allow true participation. Creating an enhanced environment, which facilitates sustainable and self-reliant socioeconomic development, is often a

necessary pre-requisite for effective community participation. It is indispensable to harmonize community participation with standard local level infrastructure planning procedures and to come up with an integrated approach.

Many books have been written about participation and related subjects. ESCAP describes community participation as follows:

"An active process whereby beneficiaries influence the direction and execution of development projects rather than merely receiving a share of project benefits. The objectives of community participation are recognized as social empowerment, building beneficiary capacity, improving project effectiveness and project cost sharing 11 "

¹¹ ESCAP Reducing Poverty by Improving Accessibility

The World Bank maintains a similar definition "participation is a process through which stake-holders influence and share control over development initiatives and the decisions and resources which affect them 12 "

The World Bank furthermore affirms that "the participation of beneficiaries is central to the effective delivery of rural infrastructure; for participation to be successful, beneficiaries must be involved in decision making related to planning, design, implementation, operation and maintenance of rural infrastructure; they must also contribute in kind or cash at such a scale as to gain a sense of ownership of the infrastructure and a commitment to operating and maintaining it 13.

It is clear that the stakeholders should be involved in all steps of the planning process and project cycle. It is necessary however to take account of local reality. In terms of infrastructure development within a decentralized structure it is equally important that the local political elite participates in the process of identifying and selecting projects. Without local political support it may be difficult to secure funding for projects benefiting the rural poor.

It is therefore necessary to encourage local level planners to both involve communities and local level politicians in the identification, design and implementation of projects. Maintaining a dialogue with these stakeholders during all stages of the planning process, identifying needs, defining solutions and priorities, selecting projects and carrying out the projects identified, is necessary to ensure their full involvement. The Integrated Rural Accessibility Planning or IRAP process described in the next few chapters seeks to achieve this.

World Bank Participation Sourcebook

World Bank Lao PDR Sector Memorandum: Priorities for Rural Infrastructure Development



Improving Rural Access

****** Background

"Poverty" and "accessibility" - or in fact "inaccessibility" - are closely linked as illustrated in the first chapter of these guidelines. This chapter will identify what the common access needs of rural households are, introduce an approach to improve rural access and link this approach to poverty eradication strategies developed by three main development institutions: World Bank, Asian Development Bank and DFID UK.

There are several factors contributing to poverty. Lack of access is certainly one of them. A substantial element generally but certainly not the only one as we have seen in chapter 1. In fact, and what has become increasingly clear is that, poverty is a multisectoral issue. The concept of access is multi-sectoral as well. Interventions to improve access often cut across different sectors. This contributes to the difficulty of defining the meaning of the word "access". It certainly is a comprehensive concept. The term access in fact comprises three elements: physical access, social

access and economic access.

Physical access relates to distances and travel. How far do people have to travel to reach certain locations. How easy or how difficult is this journey? Physical access is usually improved by the provision of physical infrastructure. Although it needs to be reiterated that infrastructure by itself does not improve access.

Culture, customs and responsibilities determine social access. A village school may exist but parents may decide to not send their daughters to school since education is perceived to be of no importance for girls. Access to primary education is therefore limited for these girls for social reasons.

Economic access relates to the ability to pay. Health services may be nearby but the cost of examination and treatment may prevent poorer families from benefitting from these "accessible" services.

These guidelines deal with

physical access. A lack of physical access deprives people of opportunities to improve and sustain their level of living. Physical access, hereinafter referred to as access, is determined by two factors: "mobility", reflecting the ease or difficulty in travelling to a specific location and "proximity", reflecting the distribution of goods, facilities and services.

The access needs of rural people can be grouped in three broad categories:

 those associated with basic needs such as water supply, firewood and food security;

Figure 1: Access to Social and Economic Needs

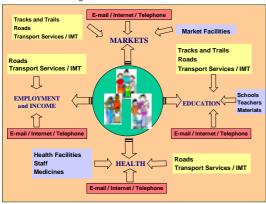
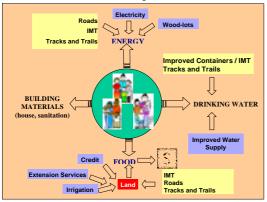


Figure 2: Access to Basic Needs



- those associated with the social welfare aspects of rural life such as health and education;
- 3. those associated with the economic welfare aspects of rural life such as agriculture, livestock, cottage industry.

Access can be improved in three fundamental and complementary ways:

- through a better siting of basic facilities and services that rural people need to use (water supplies, schools, health centers, markets); and
- through improving the mobility of rural people so that they can travel faster, easier, more convenient and less expensive (rural roads, tracks, trails, footbridges, waterways); and
- 3. through promoting and stimulating the use of communication technology so that rural people have improved access to information related to health, education and market prices (rural telephones, e-mail and internet connections).

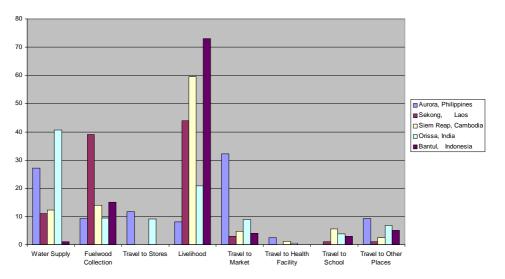
The first is a "non-transport/non-communication intervention", the second is a "transport-intervention" while the third is a "communication intervention".

Figures 1 and 2 detail the main access needs and possible interventions to improve access in rural areas.

These guidelines will concentrate

Table 1: Travel time by activity as percentage of total travel time

Percentage Travel Time (Annually)



on the transport interventions and the distribution of facilities (the yellow and purple boxes in figures 1 and 2).

A lack of access, in any sector, deprives people of the opportunity to improve their lives. The process of improving rural access should always starts with the identification of the real access needs and transport patterns of rural people. Household and village level surveys can provide sufficient information on these specific needs and the existing and lacking opportunities for people to satisfy these needs. Although not the sole indicator of access, time spent on obtaining access often provides valuable information on the importance of certain activities and the difficulty in accessing locations where assets, goods and services are available. Table 1, as an example, shows the average time people

spent in five selected rural areas in a number of different countries in gaining access. Table 1 shows that in the selected areas people spent most (travel) time in meeting subsistence and livelihood needs (food, water, energy and income). As observed earlier, travel time spent is not the only indicator of access, however it suggests the importance of an activity and identifies areas where access improvements are likely to have an impact on the quality of life.

If the objective is to improve access in rural areas, one should first understand the real access needs and constraints of rural people. The ILO has developed planning procedures for improving rural



access that identify these needs and constraints and, in a participatory manner, identify and prioritize access intervention. This process, Integrated Rural Accessibility Planning or IRAP, is described in more detail in the succeeding chapters.

Other Poverty Alleviation Initiatives

The emphasis in IRAP is on improving access in rural areas. IRAP, introducing a rural access planning framework, intends to direct public funds towards those investments that improve rural access and maximize impact in terms of poverty reduction. Access and poverty are linked and IRAP therefore contains a strategy to reduce poverty.

Rural areas of developing countries contain over three-quarters of the world's poor. The UN Social Summit in Copenhagen (1995) agreed to develop a global programme to halve the number of people living in poverty between 1995 and 2015. This has lead major donors such as the World Bank, the Asian Development bank and DFID to reassess their programmes, strategies and actions. This section will review the poverty alleviation strategies developed by the three organizations mentioned above and examine to what extent the IRAP process fits in with these strategies.

DFID: Sustainable Livelihoods Approach

DFID has adopted a sustainable

livelihood approach to eliminate poverty. This approach provides a way for DFID to develop and implement its development programmes so that they better address the priorities of poor people. A livelihood is hereby defined as "the capabilities, assets (including both material and social resources) and activities required for a means of living". A livelihood is considered sustainable if "it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base".

The approach, like IRAP, puts people at the center of development. It starts with an analysis of people's livelihoods and assesses how these have been changing over time. It fully involves people in this process. It then focuses on the impact of policies and programmes upon people and their livelihoods. It stresses the importance of influencing policies and programmes to address poverty. In this process, it works to support people to achieve their own livelihood goals. A quick comparison with the IRAP process shows that both approaches are quite similar in design and execution. However, while the livelihoods approach sets out with a broader overall poverty focus. IRAP centers round one major dimension of poverty: inaccessibility.

The livelihood approach identifies different types of assets upon

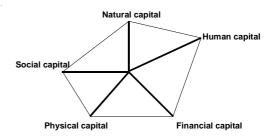
which people draw to build their livelihood:

- natural capital (land, water, wildlife, biodiversity, environmental resources)
- social capital (networks, memberships of groups, relationships of trust, access to wider institutions of society)
- human capital (skills, knowledge, ability to labour and good health)
- physical capital (transport, shelter, water, energy and communication)
- financial capital (savings, credit, remittances, pensions)

It uses the five-axis graph below to plot access of groups of house-holds to these assets. The axis are not calibrated and the plotting of assets is rather subjective. This pentagon however can be used to analyze what's already there in terms of assets (the strengths) on which one can build to further improve livelihoods or make these sustainable.

Again, as the earlier figures illustrate, the analogous with IRAP is striking. IRAP also uses a multi-axis graph to plot access to facilities, goods and services. In fact, one could argue that the IRAP graph is embedded in the livelihood pentagon. The main differences are:

 The IRAP graph centers round the concept of accessibility. Accessibility is only one of the



dimensions of poverty. The sustainable livelihood pentagon "includes" all dimensions.

- The livelihoods pentagon visualizes assets (strengths what people have) while the IRAP graph measures a lack of access (weaknesses - what people lack).
- The IRAP axes are calibrated and accessibility indicators are used to plot access to certain goods, facilities or services. The livelihood axes are not calibrated and plotting is subjective.



The World Bank: Attacking Poverty

The World Bank strategy to free the world of poverty recommends actions in three areas:

Promoting opportunity

Expanding economic opportunity for poor people by stimulating overall growth and by building up assets and increasing the returns on these assets.

> Facilitating empowerment

Making state institutions more accountable and responsive to poor people, strengthening the participation of poor people in political processes and local decision making and removing the barriers that result from distinctions of gender, ethnicity, race, religion and social status.

Enhancing security

Reducing people's vulnerability to ill health, economic shocks, crop failure, policy induced dislocations, natural disasters and violence. Ensuring that social safety nets are in place to mitigate the impact of personal and national calamities.

IRAP as a process could be drawn upon to advance in the first two areas: opportunities and empowerment.

Providing infrastructure and services to "access poor" areas by focussing public spending on these areas is a main objective of IRAP. Improving access to facilities, goods and services creates new opportunities for people living in these areas. Increased opportunities provide a potential for

further building up assets.

In addition, IRAP promotes bottom-up planning and community involvement. IRAP is best be applied at a local government level and through its transparent process strengthens local government and encourages participation. The capacity building process that is inherent in IRAP empowers local governments and communities.

The Asian Development Bank: Fighting Poverty in the Asia - Pacific Region

Asia is home to two-thirds of the world's poor. Realizing this, the ADB has set poverty reduction as its overarching goal. Poverty, in ADB's view, is a deprivation of essential assets and opportunities to which every human is entitled. Everybody should have access to basic education and primary health services. Poor households have the right to sustain themselves by their labour and be reasonable rewarded, as well as having some protection from external shocks. Beyond income and basic services, individuals and societies are also poor - and tend to remain so - if they are not empowered to participate in making decisions that shape their lives.

The three strategic pillars are:

- Pro-poor sustainable growth
- Social development
- Good governance



To make its antipoverty operations more effective, the ADB intends to use new innovative approaches. It's obvious from earlier discussions that IRAP presents such an innovative approach. It cuts across the three strategic strategies and applying the procedures in ADB finance projects would allocate resources to achieve exactly what ADB's poverty alleviation strategy envisions: pro-poor growth, social development and good governance.

In conclusion one could say that the strategies developed by DFID, the World Bank and the Asian Development Bank resemble. They all focus on creating opportunities and building up assets of poor people, promote participation and strengthen local governance. IRAP in that respect can be seen as an excellent opportunity to mainstream these poverty alleviation strategies.



IRAP Overview

****** Accessibility

All households, rural and urban, poor and rich, need to have access to facilities, goods and services in order to fulfill their basic, social and economic needs and be able to live a social and economic productive life. Access was earlier defined as the ease or difficulty of reaching locations where facilities, goods and services are available.

Chapter 1 showed that access is an important factor in rural development because it determines the opportunity that rural people have to improve their social and economic well being. People need, amongst others, to have proper access to water, energy, health services, education, transport services and markets.

Accessibility has three elements:

- 1. the location of the households;
- 2. the location of the facilities and services;
- 3. the transport system that brings 1 and 2 together.

Access is inversely related to the time, effort and cost necessary to reach locations where people could avail over facilities, goods and services. The more time, money and energy people spent, the poorer the access is in general.

Chapter 2 explained that rural access needs are grouped in three broad categories:

- those associated with basic needs such as water supply, energy and food security;
- 2. those associated with the social welfare aspects of rural life such as health and education:
- those associated with the economic welfare aspects of rural life such as agriculture, livestock, cottage industry.

It is known that a lack of access is a contributing factor to poverty. It is however only one of the constraints to poverty alleviation. It is a difficult task to single out "access" and to point out to what extent it constrains development. A lack of access however con-

straints opportunities for people to develop and sustain their level of living. A lack of proper access therefore often induces poverty.

Chapter 2 also showed that access can be improved in two fundamental and complementary ways:

- through a better siting of basic facilities and services that rural people need to use (water supplies, schools, health centers, markets); and
- through improving the mobility of rural people so that they can travel faster, easier, more convenient and less expensive (rural roads, tracks, trails, footbridges, waterways).

The first is a "nontransport intervention" while the second is a "transport-intervention".

A specific approach seems necessary in rural areas, one that effectively addresses rural access problems and reduces isolation and alleviates poverty. More emphasis is to be given to the development of an integrated approach that simultaneously improves the rural and feeder road network and the distribution of facilities and services. This approach has been developed by ILO and is called "Integrated Rural Accessibility Planning" or "IRAP".

**** The Process**

The IRAP approach varies in

different countries where it has been applied but can be briefly described as follows:

Steps 1 and 2: Data collection and processing

The first step is to carry out a situation analysis that identifies access problems in target areas regarding the mobility of the population and the location of services and facilities. Local communities, organizations (government and NGOs) and individuals are involved in this process in terms of providing the information needed. Local enumerators are trained to carry out the survey and to process the data. Data comprises secondary data (population, agriculture



Collecting primary data in a village

outputs, etc.) and primary data. At the village level, primary data is collected on time taken and the manner in which households obtain access to services and facilities. The collected data is processed and analyzed, which results in the identification of demand-oriented access or transport needs in the target areas.

Step 3: Preparation of accessibility profiles, indicators and maps

The access profile of a target area covers a set of basic information on both locations of services and facilities and the difficulties that people have in gaining access to them. For each sector, accessibility indicators (AI) are calculated. The indicators are calculated by relating the number of households in a target area to the difficulty of reaching facilities and services. Different indicators are used in different countries. In addition, based on the gathered information, accessibility maps are prepared in order to have a better visual presentation of access profiles in target areas and to compare alternative solutions to access problems.



An example of an accessibility map

Step 4: Prioritisation

The larger the value of AI, the worse is the access problem. The target areas are ranked and prioritised accordingly. The target area with the worst access indicator in a particular sector gets the highest priority for access interventions in that sector.



Presenting access priorities to the district development council

Step 5 and 6: Data validation and defining targets and objectives

The access profiles will be presented and the data validated in a workshop with representatives of local authorities, organisations and communities. During the workshop the sectoral objectives

for access improvements will be defined. Where national targets exist, these will be used to define overall objectives, e.g. all households in an area should have direct access to potable water, not exceeding a distance of 500 meters, all year around. Targets should be realistic and attainable, based on the available resources.

Step 7: Project identification

The results of the above mentioned workshop contribute to identification of a set of interventions or projects which would most effectively reduce the time and effort involved in obtaining access to supplies, services and facilities. These interventions are



Validation of data at commune level

related to transport (rural transport infrastructure. low cost means of transport or transport services) and non-transport services (e.g. better distribution or the most appropriate locations of services).

Step 8: Implementation, monitor- ** Main Characteristics ing and evaluation

The identified projects are then considered and integrated into the overall local development planning system for implementation, monitoring and evaluation. The target communities and organisations are, preferably, not only involved in planning but also contribute to implementation and maintenance of what has been planned.

The objective of Integrated Rural Accessibility Planning (IRAP) is to - in a cost-effective manner improve access to goods and services that rural communities need for their social and

economic development.

IRAP introduces a set of planning tools which are based on the access needs of the rural population and seek to maximize the use of local resources.

IRAP, in short, is a local level, needs-based, area-development, planning tool for local resource-based rural



Identification of interventions at village level

infrastructure development. Its main features are its simplicity, user-friendliness, low-cost application and immediate outputs.

Planning Tools

Integrated Rural Accessibility
Planning is a set of planning tools
that can be used to strengthen
existing planning practices. It
does not seek to replace existing
planning processes or procedures
but aims to support these by
encouraging due attention for
accessibility issues.

The main tools introduced are:

- A Questionnaire
- Accessibility Mapping
- An Accessibility Profile
- Accessibility Indicators
- Catchment Areas
- Priority Mapping
- Project Development
- Access Monitoring and Evaluation

The diagram on the following page shows when these tools are applied during different stages of the planning process.

Area-based Approach

The essence of the IRAP process is to introduce an area-based approach towards improving rural accessibility. IRAP identifies specific rural access needs and seeks to address access problems through an integrated approach. It enhances participation and promotes an efficient "bottomup" process for planning of rural

access in general and rural infrastructure in particular.

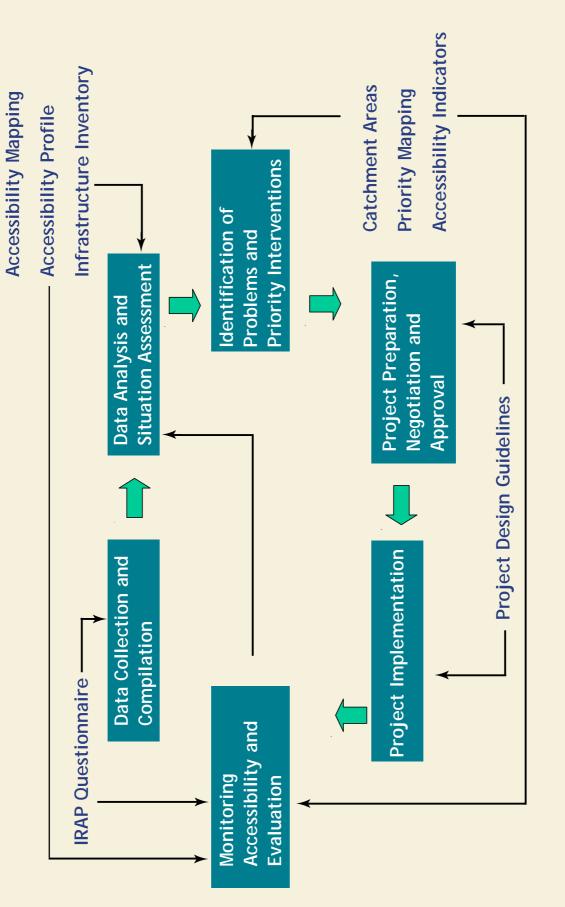
Three Main Questions

The IRAP process endeavors to address three questions related to rural accessibility, transport and infrastructure: what should be done where and how to improve rural access:

- it defines the priorities for different sector activities to improve accessibility of rural households: what should be done? (improved road access, improved access to primary education, improved market access etc.);
- it defines the priority locations for particular project interventions: where should it be done? (in village A or village C or between village D and E, etc.);
- 3. it defines the most effective design for project interventions to ensure community participation and an effective use of local resources: how should it be done? (using labour-based procedures or more equipment based procedures; levels of community participation, etc.).

Multi-sectoral and Integrated

The planning procedures are multi-sectoral and involve various sectors simultaneously (transport, agriculture, health, education, water etc.) and stimulate a more integrated rural development



through the proper planning of infrastructure that cuts across different sectors such as the rural roads.

IRAP is **integrated** in that it considers all aspects of household access needs (subsistence, social and economic) and in that it considers different strategies for reducing the problem. Water supplies, irrigation, rural roads and social infrastructure are usually planned in isolation from each other. This does not present any problems in relation to major infrastructure programs. Turning to rural infrastructure this approach is not appropriate. It requires a more integrated approach since, especially at the local level, there is often a close interdependence among different types of rural infrastructure.

Participation

IRAP enables local people to more actively participate in the process of planning. It is imperative for sustainability of access interventions that attention is given to all stakeholders from the administration at the district or provincial level to the beneficiaries in the communities. IRAP seeks to involve all stakeholders in its process.

In addition it encourages to involve those who benefit in the design and implementation of local infrastructure. This often reduces the cost of interventions through cash or in-kind contributions from beneficiaries and, again, increases the impact

through increased sustainability.

🔆 Two Main Strategies

Improved transport is only one of the means by which access can be improved. The alternative is to improve the distribution of facilities and services which reduces the demand for transport. IRAP has adopted a dual strategy to address the problem of poor access. Either bringing people more easily to the services and destinations they need to reach (i.e. improving the mobility of people) or bringing services and supplies closer to the people (i.e. reducing the need for transport).

Simple and Inexpensive to Use

IRAP consists of planning procedures that are simple to use and that are **not expensive** to apply and identifies interventions that respond to people's needs. IRAP however is not a planning system as such. It consists of a set of planning tools that needs to be integrated into an existing planning process. Existing planning systems in use, no matter how rudimentary they may be. are the most sustainable forms of local level planning: they are being used by the local planners. IRAP seeks to strengthen the existing processes by introducing new techniques and procedures which can be integrated to upgrade specific activities such as data collection techniques, mapping procedures, techniques for priority setting etc..



IRAP is a set of local level planning tools designed for use at the provincial or district level. Resources at this level are extremely limited and consequently a planning technique to be introduced should not make intensive demand on the financial resources. It should be inexpensive in its use. Provincial and district staff carry out IRAP activities. The cost of carrying out the planning exercise is therefore limited to field allowances and travel cost of counterparts and participants in training courses, the reproduction of instruction materials and various miscellaneous costs.







Preparatory Activities

** The Necessary Groundwork

The Integrated Rural Accessibility Planning (IRAP) process has been designed for application at the local level. Amongst its principle users will be the local planners and local government technical staff. IRAP, as explained in the following chapters, is basically a set of local level rural infrastructure planning tools for use at the community level and lower levels of administration. In the process of applying it, capacity is built at local government level to sustain the process. IRAP is an area-based planning tool, which assists local governments to identify the "real" access needs of the local communities and to define and prioritize "appropriate" interventions to improve access. Interventions to either improve rural mobility (roads, bridges, tracks etc.) or to improve the distribution of facilities and services (water supplies, schools, health centers, markets etc.). The whole process is participatory and involves the local communities and local government officials representing the different sectors.

Before introducing the process in a country it is essential to first analyze the existing political and administrative context in which the tools will be applied and, if necessary, modify the process so that it addresses the actual planning needs of the country. This preliminary work should consider the following:

- The policy basis
- The main focus of application
- The best institutional address
- The sector coverage
- The planning system in place

The Policy Basis

Before starting to initiate the planning process one needs to identify a policy basis for IRAP. This is likely to be a decentralization act, a rural road/transport/infrastructure sector policy or both.

A decentralization act usually transfers extensive responsibility and authority to local government units. These new responsibilities bring forth a need for staff training and appropriate tools and processes to adequately equip the local governments in facing their new tasks. Amongst the tasks to be decentralized is often the responsibility for local governments to develop and maintain rural infrastructure. IRAP's procedures, training and technical assistance, with its onsite and hands-on approach to local level access (infrastructure) planning, will indeed provide the local planners with relevant skills and encourage active involvement in rural infrastructure development through a capacity building process. The IRAP approach virtually contributes to the decentralization process and provides a set of tools for local governments to be more responsive with their enhanced powers and responsibilities.

A rural road/transport/infrastruc-

ture sector policy generally includes a strategy for developing rural roads, rural transport or rural infrastructure. These policies frequently emphasize the planned and sustainable development of rural infrastructure (roads or transport) and identify funding mechanisms, the institutional set-up, responsibilities and planning, implementation and maintenance procedures and techniques. The policies often emphasize the need for a decentralized approach. The IRAP approach is generally in accordance with such a sector policy and could be introduced in line with the said policy.

The Main Focus of Application

IRAP is a participatory, bottomup, plannings process for use at

Table 1: IRAP Applications in Selected Asian Countries

0	Occupations Marine Leaves Characterists			
Country	Main Level of Application	Structure		
Philippines	Municipality	National level, region, province, municipality and village. A municipality generally consists of 10-20 villages.		
Laos	District	National level, province, district and village. A district generally consists of 25 to more than 100 villages.		
Cambodia	District	National level, province, district, commune and village. A district consists of 10-20 communes while a commune comprises 8 to 10 villages on average.		
India	Gram Panchayat	National level, state, district, block, Gram Panchayat (sub-district) and village. A Gram Panchayat consists of 5 to 15 villages.		
Nepal	Village Development Committee (VDC)	National level, district development committee (DDC), VDC and village. A VDC consists of 9 wards (villages).		
Indonesia	Kecamaten	National level, province, kabupaten, kecamaten, desa and dusun (village). A kecamaten consists of 5 to 15 desa.		

Table 1 shows that the main level of application is at district or sub-district level. This is generally the next level up from the village.

the community or local government level. The information, proposed interventions and priorities that result from its application at the village level will be consolidated at a higher level to expedite a response. Before the IRAP process is initiated in an area or country it is necessary to assess and decide the most appropriate level for its application. Is this the sub-district (a number of villages), district (a number of sub-district) or provincial level (a number of districts)? The answer to this question will depend on a number of institutional and other factors such as the level of decentralization and responsibility, decision-making authority and capacity (human capacity and equipment). The primary focus of application should be the level of administration that will have the main responsibility for the overall development of rural transport, roads or infrastructure. By focussing at this level the application of the process will enhance the effectiveness of the

decision making process. In view of different responsibilities at different levels it might be necessary to focus the application at different levels of local government. This would also contribute to an improved vertical coordination between local government units.

The following table identifies the main focus of application in a number of Asian countries where IRAP is presently being introduced or being applied.

Table 1 shows that the main level of application is at district or sub-district level. This is generally the next level up from the village.

The Best Institutional Address

There is a need for an institution to coordinate and oversee the implementation and development of IRAP activities in a country. This unit could also become the central point for information keeping and technical assistance. The best institutional address for

Table 2: Main Institution	Responsible for	Developing IRAP.
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Country	Institution		
Philippines	Department of Interior and Local Government (DILG)		
Laos	Local Road Division under Ministry of Communication, transport,		
	Post and Construction (MCTPC)		
Cambodia	Ministry of Rural Development (MRD)		
India - Rajastan State	Birla Institute for Science and Technology (Pilani)		
India - Orissa State	OSVSWA (Local NGO)		
Nepal	Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR)		
Indonesia	Gadja Mada University		

such a coordination unit is a central ministry or department. Ideally, this is a ministry or department that oversees the decentralization process in a country and is responsible for monitoring and building capacity at the local government level. Alternatively, it could also be a ministry that has the responsibility for rural development or rural infrastructure development. From its central location, the team working with the IRAP activities would guide local governments through the process producing the different IRAP outputs and concurrently build capacity to maintain the process.

Also, being multi-sectoral in its approach, IRAP requires a certain level of co-ordination across the different sectors. This requires that the central unit is located in

a ministry that is able to accomplish such coordination.

Initially, during the introduction and development of IRAP in a country, this unit could be attached to a University or a nongovernment organization. It could then be transferred to a more appropriate institutional address once the procedures are being replicated at a larger scale. Table 2 shows the main institutional address of IRAP activities in different countries.

The Sector Coverage

Experience has shown that different IRAP applications in different countries cover different sectors. A review of different applications showed that the selection of sectors included in different country IRAP applica-

Table 3: IRAP Coverage by Country

Philippines	Laos	Cambodia	India	Nepal	Indonesia
water	water	water	water	water	water
health	health	health	health	health	health
education	education	education	education	education	education
firewood					
electricity					electricity
markets		markets		markets	markets
livelihood					livelihood
roads	roads	roads	roads	roads	roads
		water			
		transport			
transport					
services					

tions was primarily determined by the institutional address of the programme. The following table illustrates the different sector coverage in 6 countries where IRAP is being applied.

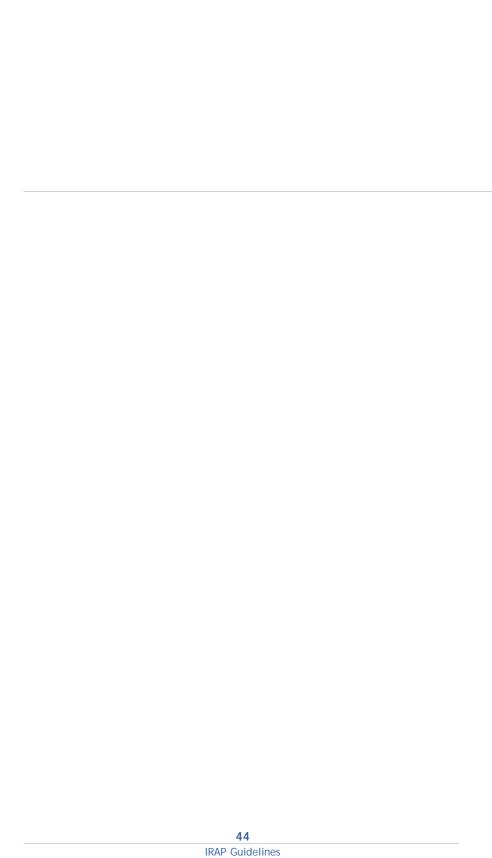
Ideally, the selection of sectors is based on research that is focussing on the accessibility needs of the rural households. IRAP is a planning tool aiming to improve the access that rural people have to basic, social and economic goods, facilities and services. If the objective is to improve rural access then the planning process should take into consideration those sectors where access is proven or perceived to be problematic.

A sector that is presently not included in any of the IRAP applications is Information Technology. Access to rural

telephones or e-mail/internet services is becoming an increasingly important element in rural development. Future IRAP applications should take this into consideration.

The Existing Planning System

Last but not least, before any application in a country it is necessary to study the existing planning process and practice first. This is to determine the entry points for the IRAP application and to determine how and where IRAP could strengthen or augment existing planning processes or practices. IRAP is a set of planning tools and not an entire planning process as such. It should support existing processes and procedures and avoid duplicating these and not develop any parallel systems.



The Collection of Data

Objective

The IRAP process really starts with the preparation of the survey instrument necessary for -collecting the data required for access planning. Different kind of planning requires different kind of information (data) and data for access planning is usually not readily available.

The main aim of using IRAP as a planning tool as described in a preceding chapter is to identify accessibility problems and prioritize interventions that will improve access in rural areas. This process is based on a geographical approach and cuts across sectors. Access is an issue that often affects several sectors simultaneously. The access interventions however typically belong to a specific sector, for example a road, a footbridge, a school or a health center, all aiming at improving accessibility.

Specific information is generally required to identify the particular access needs, access constraints and access priorities of rural households. Not all of this infor-

In the Philippines, a 13- page village questionnaire is used to collect nation-wide information on village accessibility levels, access problems and access priorities for the following sectors:

- 1. water supply
- 2. energy (fuelwood and electricity)
- 3. education
- 4. health
- 5. livelihood sources
- 6. agriculture and fisheries
- 7. markets
- 8. transport services and roads

mation is always readily available. The planner therefore often needs to collect additional data to complement data that is available. A variety of data is needed to understand the access characteristics of the communities, analyze levels of access and calculate access indicators, which will be used in the planning and decision making process.

Accessibility planning is often a new additional planning activity and the IRAP process sometimes generates data that did not exist

before. This information often complements existing data and provides a more comprehensive picture of the area.

IRAP is best being done at the local level. At the village level to determine intra-village priorities and at the local government level to determine inter-village and inter-sector priorities. Especially at the local government level, detailed comprehensive information about the area under its jurisdiction is often lacking. Villages usually are better aware of their access needs, problems and priorities.

Data collection exercises are sometimes poorly conceived. The rationale for data collection is often not "what information do we really need to take decisions about accessibility, and what data

First decide on the indicators that you are going to use then decide what data you need to collect



First collect data and then decide how to use it



do we need to collect for this purpose?" (a reverse question) but more often "we now have collected this particular data and how are we going to use this data for planning purposes?". Obviously, the first procedure is the better one.

The remaining of this chapter describes IRAP as it is applied at the local government level. IRAP data however is collected at the village level. We need to know where the people live, what they do and what problems they experience with regard to accessibility. Usually, two kinds of data need to be collected for IRAP planning purposes: primary data and secondary data. Primary data are those collected first hand, by an enumerator, in the community. Secondary data, on the other hand, refers to available processed and semiprocessed data already collected and compiled for a variety of other purposes.

Using secondary data is usually less costly and requires less time to collect. It can usually be compiled in government offices without the expense of field visits. However, this is also be one of its main weaknesses since it isolates the planning team from contact with the villagers.



The recommended procedure for data collection is as follows:

- 1. Determine what data you need to carry out the IRAP planning process;
- 2. Assess the scope and accuracy of existing secondary data;
- Determine how to collect the "missing" primary data;
- 4. Develop the survey instrument;
- 5. Train enumerators and supervisors;
- 6. Visit the government agencies to collect secondary data;
- 7. Visit the villages to collect primary data

Primary data is first-hand data and needs to be collected straight from village representatives usually in the village. Governments consist of. sometimes highly compartmentalized, technical line ministries each in charge of their own planning process and data collection. Technical line ministries often have only part of the data necessary for IRAP. It is only at the local level that data is often collected and stored on a multi-sectoral basis. The most useful data for IRAP purposes is often collected by local government agencies and kept in a disaggregated form. The official Statistics Center of the Government often lacks data in a disaggregated format. Experience however has shown that most data necessary for rural access planning needs to be collected first-hand in the villages.

Preparatory Works

*Identifying data needs*IRAP uses a variety of data which

basically comprise the following four broad categories:

- data on basic village characteristics
- data on economic activities
- data on access/transport characteristics
- village perceived problems and priorities

Primary and secondary data

Before collecting data the planning team needs to make an assessment what data is available (secondary data) and what data needs to be collected in the village (primary data). The following sources of secondary data are common in most countries:

- Census information (population census, agricultural census, social census);
- Sectoral data from technical line ministries;
- Statistical yearbooks;

Secondary data has to be fairly recent, comprehensive and reliable in order to be used. The planning team should therefore assess the quality of different data sets. This can be done by evaluating the date, method and level of data collection, the



training for enumerators, data management systems and field verification. If the quality of the data is not reliable then the validity of the planning results will be doubtful as well.

Once the planning team has decided what data is readily available as secondary data and what data needs to be collected first-hand in the village, the team can start developing a survey instrument. The planning team however should see to it that primary data collection is minimized since this is expensive, time consuming and often not sustainable.

Developing the survey instrument to collect the secondary data

There are three main tools to collect existing secondary information:

➤ A district questionnaire

The district questionnaire is used to collect data in Government offices at the sub-provincial level (district, sub-district or municipality). The questionnaire is often divided into different technical sectors to be able to collect different data from different technical line ministries.

An infrastructure (road inventory) form

The infrastructure (road) inventory form is used to collect data on infrastructure assets and/or road network characteristics.

A service-based information form

This form is used to collect

available information directly from a service center such as a school, health post or market.

Developing the survey instrument to collect the primary data

For IRAP purposes, we have seen that almost always at least some primary data collection is necessary. It is important that the IRAP team assesses the most effective means of obtaining this required information. It is required to develop a survey instrument to collect this data. The survey instrument can consist of the following tools:

➤ A household questionnaire

Household surveys are time consuming and difficult to implement. It is therefore recommended to minimize the use of household surveys. Most data required can be collected through key informant interviews at the village level.

➤ A village questionnaire

This questionnaire should be used to collect data at the village level in a village meeting. The questions should relate to:

- general village characteristics
- livelihood activities, agriculture and marketing
- existing transport system (village access infrastructure, roads, transport vehicles)
- location, availability and quality of services (water, health and education)

- travel times, frequencies, costs and modes
- perceived problems and priorities

There are basically two methods to collect the data. Either teams of enumerators visit the villages to talk to people and collect the data or village representatives are called to a district/municipal office to provide the necessary information. The selection of the best option will depend on the expected quality of the data, the



collection cost and the time necessary. The IRAP planner should at all costs try to minimize data collection costs and avoid

duplication of data collection.

The village level data consists of two types: data on facts and data on perceived problems and priorities. The last mentioned data is highly subjective and may change over time, differ per person and could be biased to satisfy certain individuals (including the interviewer) and not really reflect the problems/priorities in the area.

Preparation for the village survey

Before starting the data collection it is necessary to have a list of all villages in the area to be covered, village codes and base maps showing the location of the villages. If maps are not readily available it is recommended that the planning team somehow produce these maps manually.

The villages should be grouped in clusters of nearby settlements. The planning team needs to take a decision on how many enumerators are needed to survey all villages/clusters. Teams of enumerators should then be assigned to different clusters of villages to start the process of data collection. The organization of the survey, assignment of enumerators and identification of supervisors should start before the training on data collection starts.

Selection of enumerators and supervisors

Enumerators are people going out







to the villages to collect data and should preferably be recruited from the areas to be surveyed, as familiarity with the place and the villages is an added advantage. Enumerators should preferably also be selected from a group of people that have past survey experience and work for a local government agency. The planning team also needs to identify a group of supervisors to assist the enumerators and to monitor the implementation of the survey.

Securing a budget

Data collection involves costs and it is necessary to prepare a budget before the work starts. Experience has shown that data collection would cost somewhere between \$30 and \$75 per village depending on the size of the survey.

Training

People who will go out to collect the primary data will have to be trained and instructed properly. Instructions as to the conduct of the village level interview should preferably be given in a classroom type of training. This training, which needs to be attended by all enumerators and supervisors, should provide the needed understanding of the intent of the questions on the data forms and how these will be filled out. Fnumerators need to have a thorough understanding of the questionnaire to be able to complete the village questionnaire during the interview.

Enumerators may need training in:

- data collection techniques
- community participation
- planning the survey in their allocated villages

Supervisors may need training and assistance in:

- organizing the survey
- supervising the survey
- assisting the enumerators during or in between the interviews
- controlling the questionnaires and checking the data entrees

A standard training course exists and sets of training modules and materials have been prepared for this course. This training course is usually referred to as the "T-1 Training on Data Collection". The course is organized for enumerators and supervisors who will be responsible for primary data collection. Participants in this course familiarize themselves with the concepts underlying the IRAP process, the survey instrument and the skills necessary to collect the data needed. Participants review the village question-



naire and go out and do a field test. The results of the field test are then discussed in plenary at the end of the course. The entire course should take not more than 2 to 3 days.

Immediately after the training supervisors and enumerators need to jointly work out a time schedule for the entire survey including a detailed itinerary to visit the villages.

Implementation

The entire data collection exercise in an area should not take more than a couple of weeks (maximum is 4 weeks). It is also important that the data collection starts immediately after the training. Supervisors could, if deemed necessary, accompany enumerators during their first few village interviews.

Secondary data collection

Secondary data is usually collected from existing data banks, socio-economic profiles, reports and other written materials. The information needed usually needs to be collected from different government agencies. Secondary data forms include the district level questionnaire, infrastructure inventory form and service center form.

Primary data collection

The village level survey will be conducted in all villages of a selected administrative area ¹⁴. To the extent possible, villages should be informed about the

forthcoming data collection exercise in order to be able to organize themselves.

As discussed above, village level data can be collected in two different ways. Enumerators visit every village and consult village officials and other key informants or alternatively village officials and other kev informants are called to a district/ municipal government office to be interviewed. Obviously the first procedure is the preferable technique since it brings the enumerator in direct contact with the village.

Enumerators collect data at village level in a meeting with village key informants. Key informants should include people knowledgeable about the village such as:

- village leaders
- village elders
- teachers
- nurses
- women representatives
- farmers representatives
- vouth

Enumerators will fill in the questionnaire during the interview. It is recommended to keep the group of key informants rather small (5-7 persons).

¹⁴ A sub-district, district, municipality or province.



Quality control

It is important to emphasize the need to obtain good quality data. The data will be used as a basis for planning, and the planning may be less effective if the data is inaccurate. Wrong data can result in less than optimal decisions. Good quality data is defined as being accurate and recent

Payment

Upon satisfactory completion of the survey the enumerators and supervisors will have to be reimbursed for their expenditures which includes travel and field allowances. Sometimes it is necessary to pay part in advance to ensure that enumerators have available cash prior to the fieldwork.

Compilation of survey forms

A final step in the data collection process is the compilation of the survey forms. The supervisors need to collect all primary and secondary data forms and deliver these to the planning team after verification.





Computerization of Data

Objective

The IRAP exercise will make available, often for the first time, a comprehensive set of data, which provides information on access in all villages in a certain geographical area.

The "raw" village data needs to be processed so that it becomes informative and usable. Data needs to be compiled and computerized into tables presenting the data for the different villages. These tables can then be worked into village accessibility indicators. This would allow the analysis to identify access problems and priorities at village level.

The IRAP data can also be aggregated in district, provincial, regional or national data banks. The information contained in these data banks, referred to as the Accessibility Data Base (ADB), needs to be made available to local government planners and other interested parties. IRAP data can be used for a variety of information and planning purposes.

Preparatory Works

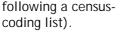
The computerization of data requires data encoders and computers. One of the first tasks is to identify the level at which the data will be computerized. This is preferable the lowest level of administration where computers are available. In most countries where IRAP has recently been applied this is done at district level.

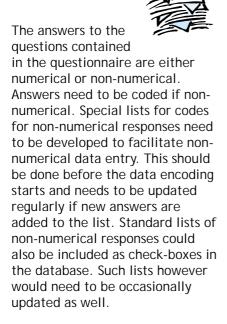
After the data has been collected by the interviewers, and reviewed by the supervisors to see if the quality is good enough, it needs to be brought to the data processing unit. It is important that the data forms are complete, readable and the data is of good quality. If the data indeed meets these minimal standards it is ready for computerization. This implies that the data needs to be compiled into different tables presenting the data by sector and geographical area.

It is necessary to develop a data storage and retrieval system for this purpose. Standard files need to be prepared preferably using computer software such as Microsoft Access or Excel to facilitate data encoding, processing and analysis.

Special data entry forms should be designed to speed up data encoding and minimize mistakes.

Before starting the processing of data it is recommended to first code the questionnaires based on pre-assigned village codes (usually





If the data storage and retrieval system has internet capability this would increase the sharing and transferring of accessibility data. A good example is the Philippine database (www.irap-phil.net).

Training

The data encoding requires data encoders and supervisors. Often it will be required to instruct local staff on the basics of the software used to design the ADB to be able to adequately and effectively enter the raw data into the database. Different software is used in different countries. Experience has shown that Microsoft Access and Microsoft Excel are amongst the most appropriate software for setting up the database. An advantage of these programmes is that they are readily available and people often know how to use them.

Data encoders should have the necessary computer skills and be sufficiently familiar with the software used before being assigned to the job.

During the data entry training, data encoders need to receive basic instructions and should be introduced to the rules of data encoding. This training is best done on-the-job.

People, for example, should receive instructions not to sit behind their computers for too long a period of time. Data encoding is a tedious affair and is likely to become boring after a while. It is strenuous on the eyes

and requires concentration. The likelihood of data entry errors, for example, increases if regular breaks are not taken.

Somebody more experienced should supervise the work and check on data entrees and work schedules and outputs.



Implementation

The computerization of data is usually done at a local government office. The standard data entry and retrieval forms should have been loaded on to a hard disk of the computer assigned and encoders should have been instructed on how to load the data before the work can start.

The computerization of the data can start as soon as the data collection exercise for a district has been completed. Data encoders will enter the information into the database and the final output of the data entry exercise is a computerized database (Accessibility Data Base) presenting data by village, district or sector. It is important that data entrees are checked regularly.

Once all the information has indeed been computerized and

the Accessibility Data Base (ADB) is finalized, copies of the computer printouts of the consolidated data should be sent to the relevant institutions for validation.

It is important that different districts or provinces use similar files for afterward consistency. It is also important to regularly back-up the database files.

The database will be subjected to periodic revisions. Such revisions should be furnished to the responsible repository of accessibility information in the country. It is recommended that the databases be updated every 3 years.

The document that contains all the village level data is generally referred to as "the ADB Book". The computerized data, in specially designed data forms, will be printed out and draw up this ADB Book. The ADB Book however is a mere compilation of raw village data and are prepared at district or municipal level.

The layout of the ADB Book should be as attractive as possible and the user should be able to understand its contents and quickly find the data he needs. The ADB book should be organized by sector presenting the village data and the data should be expressed as numerical values or text. The use of codes should be limited to avoid complications once using the book.

- 1. Cover page with map of district
- 2. Summary of consolidated data
- 3. General characteristics
- 4. Transport characteristics
- 5. Water supply characteristics
- 6. Education characteristics
- 7. Health care characteristics
- 8. Income generating activities characteristics
- 9. Market access
- 10. Village problems
- 11. Village priorities

The ADB Book includes the "raw data" by village and a summary of the consolidated data of all villages in the district. A proposed outline of the ADB Book could be the following:



Upon completion the ADB Book should be presented at district level to explain its contents to district officials and to validate, correct and/or update the ADB Book

After corrections have been made the final version of the ADB book should be printed in the local language or in English.





The Accessibility Profile

Objective

Both, institutions and individuals are likely to express keen interest in the Accessibility Data Base (ADB), which contains all the information collected. ADBs by themselves however are not very informative and only present different "raw" data sets. There is no real analysis done yet except for the calculation of some district/municipal totals and averages. Also, the reproduction of ADBs is rather costly (they are usually thick!) and they should only be given to people who can really make use of them.

A separate document, the Accessibility Profile, has to be prepared which will briefly describe a district/municipality and summarizes access conditions. This document should be more of a descriptive character, more reader-friendly and could be disseminated on a larger scale.

This Accessibility Profile should provide a written summary and a numerical assessment of access conditions in an area. It should aggregate and average village conditions. The Accessibility Profile, together with the indicators, will reflect levels of access in the individual subdistricts and/or the district or province as a whole. The Accessibility Profile is therefore a standalone summary document, which provides the reader a quick overview of the access situation in a particular area. The Accessibility Profile is widely disseminated. An example of the transport chapter of the Accessibility Profile for Nonghet District in Xiengkhouang Province in Laos is given below:

ACCESS TO THE TRANSPORT SYSTEM 15

One of the principal factors affecting the daily lives of the rural population in the Lao P.D.R. is their isolation and the limited access they have to basic, social and economic goods and services. As a result of the often mountainous terrain, the low population density and large distances between the villages, access is often poor.

Improving access is a major determinant for sustainable human and economic development in the province and roads are, correctly, seen as a means to facilitate rural development; new roads will improve transport; improved transport will solve access problems.

The improvement of the rural road network however does not, of itself, improve access. Improved access is dependent on the extent to which rural road improvements result in transport services becoming cheaper, faster, more frequent, more reliable and safer; the use of the improved network by more vehicles and traders and government extension workers coming to the villages.

Nonghet District's road network is limited. Only 23% of the villages have all year round road access. The majority of the villages (64%) have no road access at all. 13% of the villages have road access during the dry season only.

River transport is not an important alternative means of transport in Nonghet District: Only 1 village is accessible by river throughout the year and 1 village during the rainy season only. Most villages (98%) have no river access however and fully depend on the road network.

Table 18 shows different characteristics for different zones.

Table 18: Transport Characteristics by Zone

Sub- district (zone)	Number of Villages	Percentage of Villages With All Year Road Access	Percentage of Villages with Dry Season Only Road Access (including villages with all year access)	Percentage of Villages All Year River Access	Percentage of Villages with Wet Season River Access (including villages with all year access)	Percentage of Villages Without Any Road or river Access
Prefecture	10	90%	90%	0%	0%	10%
Sandone	10	50%	60%	0%	0%	40%
Phavaen	18	22%	27%	0%	0%	72%
Thamtao	14	0%	29%	0%	0%	71%
Phakboune	15	33%	47%	0%	0%	53%
Phabong	15	20%	67%	0%	0%	33%
Keohone	5	0%	0%	0%	20%	80%
Chang	5	0%	0%	20%	20%	80%
Borkor	23	0%	0%	0%	0%	100%
District	115	23%	36%	1%	2%	63%

The total length of the road network in Nonghet District is 147 kilometers.

 $^{^{15}}$ "District Accessibility Profile $_$ Nonghet District, Xiengkhouang Province - IRAP Xiengkhouang"

Table 19: Road Network Characteristics

Classification	Total Length		All year Round		Dry season Only	
	km	%	km	%	km	%
National Road	69	47%	69	100%	0	0%
Provincial Road	0	0%	0	0%	0	0%
Rural Road	78	53%	18	23%	60	77%
Total	147	100%	87	59%	60	41%

The road/population density is 0.0042 (4.2 meters of road per person).

The road/land area density is 0.065 (65 meters of road per square kilometer of land).

At the end of the village interview key informants were asked to assess access problems by sector and identify priority sectors for projects. Tables 20 and 21 present the results for Nonghet district.

Table 20: Village Access Problems as Perceived by the Key Informants

Percentage of Villages Having Identified Access to the Road Network as:				
A Very Big Problem A Minor Problem No Problem				
63%	9%	29%		

Table 21: Village Access Priorities as Perceived by the Key Informants

Percentage of Villages Having Identified Access to the Road Network as:					
A First Priority A Second Priority A Third Priority No Priority					
for Improvement	for Improvement	for Improvement	for Improvement		
34%	15%	12%	39%		

The main problems identified were no roads (90% of all villages identifying access as a very big problem).

All year round transport services are available in 24% of all villages. The main means of public transport are modified passenger pick-ups and trucks.

Table 22: Village Access Problems as Perceived by the Key Informants

Percentage of Villages Having Identified Access to Transport Services as:				
A Very Big Problem A Minor Problem No Problem				
50%	22%	28%		

The main problems identified were no vehicles (74% of all villages identifying access as a very big problem.

The most important private means of transport are bicycles (1 for every 2.6 households), motorcycles (1 for every 22 households), non-motorized boats (1 for every 65 households) and trucks (1 for every 236 households).

Complementary to the Accessibility Profile is the IRAP road inventory. The aim of the road inventory is to make an overall assessment of the condition and geographic distribution of the road network in a municipality or district. The IRAP road inventory does not provide any technical information on the specific condition of each road link or provide data on the cost of

For reasons of comparison it is recommended that different districts/provinces use a standard format. This format needs to be prepared by the IRAP planning team. Local planners need to be instructed on how to take the raw data from the ADB and translate this into meaningful statistics. This process can either be done manually or with the assistance of different computer software.











maintaining or improving existing links. It is a first inventory to generate a rather general picture on the overall status of the (rural) road network. The road inventory together with the village data can be used to prioritize individual road links for maintenance or rehabilitation/construction purposes (see chapter 15).

Preparatory Works

The preparation of the Accessibility Profile requires processed data, a standard format and people capable of analyzing the raw data and transferring data into meaningful statistics. The Accessibility Profile can be a onepage document summarizing some key statistics by sector or, alternatively, a short report describing the district/municipality complete with a map and a short analysis by sector.

The IRAP road inventory is based on one form to record data for the individual road links. Provincial staff is trained on-the-job to fill out the forms. The data could be computerized using software such as Autocad and Microsoft Access. In addition local/ provincial teams could produce road key maps displaying the road network in a district, the quality of the roads and the villages with or without road and/or river access.

🏶 Training

Local technicians and planners are often not used to or encouraged to analyze data for



presentation or planning. Local people often collect data and send it to higher authorities who will do the job for them.

Decentralization efforts however.

aim to strengthen the local capacity to interpret and use data for planning purposes.

Local staff needs to be trained in preparing the Accessibility Profiles and Road Inventories. This could be done in a more formal classroom type of training or onthe-job under guidance of experienced IRAP planners.

Implementation

Accessibility Profiles should be prepared for all districts/provinces for which the data collection exercise has been completed. The standard format developed by the IRAP planning team should be applied. The document will summarize the accessibility situation in the area and should present the information in an attractive format.

A more comprehensive Accessibility Profile should have the following sections:

- Overview
- General characteristics and maps
- Accessibility situation per sector
- Description access problems and priorities as perceived by the communities
- Conclusions

After completion, the IRAP planning team needs to carefully review the document and, if necessary, correct errors before it is being distributed to a larger audience.



The Preparation and Use of Maps

Objective

Accessibility mapping is an integral part of the IRAP procedure. It allows the planner to visualize the location of villages and infrastructure within a given area and can help in the identification and prioritization of access problems. It also facilitates the formulation of interventions and guides in the selection of the best development alternatives. The main purpose of accessibility mapping is:

- to provide a picture of access conditions in a given area,
- to facilitate the identification of access problems,
- to formulate interventions.
- to enhance the communication of information and recommendations to an audience and
- to evaluate the impact of access improvement projects.

Maps are often used in presentations to communicate with an audience as maps are a very effective tool in sending a message. Colorful, large size maps, immediately attract the attention of the audience while visualizing

access conditions and access priorities in a given area. Maps also facilitate discussions and reactions from the audience since it allows reviewing issues on common grounds. This has proven to be effective during for example resource mobilization meetings with line ministries and donor organizations.



Maps enable integration of different sectoral analyses and provide a technical tool to demonstrate how interventions (projects) can be used to solve access problems. Equally, mapping provides a monitoring mechanism for the levels of access in particular areas.

Preparatory Works

The IRAP maps need to be based on existing topographic or other official base maps. These base maps will have to be updated and modified to reflect features such as:

- boundaries
- · population centers
- infrastructure
- service centers
- water bodies

A team needs to be appointed to prepare the maps. It is necessary for the mapping team to visit the areas where the maps are prepared for to collect additional information and to verify base maps with local planning staff and authorities.



Maps are either handmade or computerized.
Handmade maps are usually produced at the local level following standard IRAP mapping quidelines.

Computerized maps are prepared at a higher level using more sophisticated computer software such as Mapinfo or ArcView.

***** Training

Handmade accessibility mapping has been developed as a "user-friendly" process that can be easily understood by people without much technical training. Local planning staff is usually capable of preparing good quality



maps after a short demonstration and explanation.

An important part in the development of computerized mapping is the training of planning staff. The basics principles and possibilities of mapping software need to be explained and counterparts need to be instructed on how to use the software introduced. This requires the IRAP team to have at least one computer - GIS - expert on board who can develop the training curricula, conduct the training and provide supervision afterwards.

Implementation

As discussed above, maps can be prepared both manually and with the help of computer software usually for use at the sub-district and district level. Manual maps can be produced locally using inexpensive materials that are locally available. Computerized maps require computer software and hardware, which are not always available at the local level.

If the maps are produced manually it is difficult to make



changes. Also, making copies is laborious since it requires somebody to do the job all over again. It is recommended that after the necessary capacity has been established in the provinces to produce, read and use manually produced access maps the planning team moves to the next level where the mapping process will be computerized. A simple GIS software package, Mapinfo or Arc View, can then be introduced at provincial level to produce digitized maps showing bound-

aries, villages and infrastructure and thematic maps showing different levels of access.

Manual maps are usually complemented by set of plastic overlays. These overlays need to be prepared separately showing the present conditions in an area such as the existing road network, health center coverage, village distributions etc. In addition, maps can be used to visualize the indicators described in the next chapter by creating thematic maps.



The Accessibility Indicators

Objective

A distinct characteristic of the IRAP process is the prioritization of geographical areas where access needs to be improved. Applying the IRAP process will result first in the identification of geographical priorities - villages or clusters of villages - for improving access related to different sectors (water, health, education, markets, transport system, energy). Follow-up activities include the identification and appraisal of interventions to effectively improve access. This chapter concentrates primarily on the identification of priority areas for access improvements and will not go into project identification, appraisal or

prioritization. The main tool in IRAP for identifying priorities for improving accessibility are the Accessibility Indicators (A.I.).

The use of indicators is a common practice in planning. Accessibility

Indicators show the difficulty or ease with which households have access to goods and services. As an aid to the decision making process, the indicators are objective measurements of the different levels of accessibility for different trip purposes in a village or within a larger geographical area such as a district or municipality. The data collected under the IRAP exercise is refined into a set of Accessibility Indicators which relate to the specific sector under consideration.

Accessibility Indicators are derived at different levels: village, sub-district, district or province. At village level they can be used to identify village interventions. At the sub-district or district level, indicators are often use to identify villages that are most disaffected in relation to basic needs and social and economic services. At district level, indicators are being used to identify priority sub-districts. At provincial level they could be used to compare districts with each other and set sectoral and geographical priorities for public investments.

Accessibility Indicators generally relate to the number of households affected and levels of accessibility expressed in travel distances and travel times.

A first step in the process of developing indicators is to decide on the variables to be used. It is recommended to keep the indicators as simple as possible. More complicated indicators are not necessarily more accurate in



identifying priority areas but risk to unnecessarily complicate the process. The IRAP application has started with collecting data on accessibility. This data, after being

computerized, will be used to calculate the indicators.

Accessibility indicators are usually defined for the following access needs: water, energy including firewood, land for crop production, education, health,



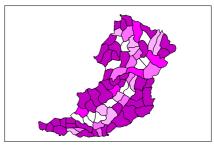
the transport system and agricultural inputs and outputs including markets. Indicators are

different levels. Whilst based on the same data, indicators become more generalized once calculated for the next level up. At village level the indicators tells us something about the level of accessibility once compared with national standards, averages or norms. At

sub-district or district level they show for different sectors which villages should be assisted to improve accessibility. If the process is repeated at provincial level then the indicators, at this level, could allow planners to select geographical or sector priorities. The following figure shows an example of indicators at sub-district level. The darker shaded areas have higher indicators, which implies poorer access.

Table 1: Accessibility Indicators - Access to the Transport System at Sub-district Level

Oudomxai - Lao P.D.R. 16



The available information in the data base should enable a planner to make an initial assessment of the total time, cost and effort requirements for a community in obtaining access to a certain good, service or facility. The indicators translate the actual level of access into numerical values. The indicators define how difficult it is for a community as a whole to have access. Indicators could then be used to rank villages on an ordinal scale.

This indicator reflects the average walking time to the all year round road network.

Table 1 provides an example of village indicators.

It is important to emphasize that indicators are developed to guide people in making decisions. The use of indicators should not become an automatism. They should not replace a participatory

planning and decision-making process but merely guide the people involved in deciding on investment priorities.

Preparatory Works

Indicators used in accessibility planning generally relate to the number of households affected and level of accessibility expressed in travel distances and travel times. In certain IRAP applications, the indicators have become more complicated in that they include quality elements and perceived values. A first step in the process of developing indicators is to decide on the variables to be used. It is recommended to keep the indicators as simple as possible. Different IRAP applications have shown that complicated indicators are less likely to be used and updated after the initial IRAP application. Also, more complicated indicators require more capacity at the local level.

To calculate the indicators one needs the computerized raw

Table 1: Village Accessibility Indicators - Santa Fe, Nueva Viscaya, Philippines

	Accessibility Indicators						
Village	Water	Fuelwood	Health	Education	Markets		
Atbu	96	112	294	146	294		
Bacneng	120	60	400	114	400		
Barabac	90	134	290	102	34		
Unib	80	72	172	160	68		
Villaflores	78	38	56	98	56		
Baliling	40	26	48	84	12		
Buyasyas	53	88	346	76	346		
Canabuan	36	49	88	102	128		
Imugan	48	36	66	117	235		

database (ADB), the formulas making up the indicator and staff instructed to calculate and process the indicators. This process needs to be supervised and checked in order to ensure that small errors in formulas or data entrees will not affect the value of indicators. This is likely to happen if the entire process becomes too mechanical.

Training

Calculating the indicators in itself is a simple procedure that basically relates the number of households who need access to services, goods and facilities to the time it presently takes to get to them. The basic formulation of the indicators involves simple multiplication. It remains necessary however that people calculating and using the indicators are instructed how to calculate them. and how to use them, even though the process of calculating the indicators is likely to be computerized.

It is necessary to properly instruct counterpart staff responsible for the development and calculations of indicators. People should understand the role of the indicators in the planning process and need to be able to "construct" the indicators. It is important to differentiate between two groups of people: people who are responsible for calculating the indicators and people who will use the indicators as a planning tool.

T-2 Training on Calculation of Indicators and Priority Setting

These two different groups of people are not necessarily the same. The first group usually consist of regular planning staff responsible for data base management functions whilst the second group includes the planners and decision-makers. The training of this latter group will take place during the so-called T2-Training on data analysis and prioritization.

Implementation

It is important to develop the indicators in a participatory way. Indicators can be calculated for different levels. Whilst based on the same data, indicators become more generalized once calculated for the next level up.

Once it has been decided which variables make up the indicators and the relative importance of the different variables has been determined (see below), the process of calculating indicators can start. From the existing Accessibility Data Base (ADB), the accessibility indicators will be calculated to provide a simple assessment of access conditions in a certain area and help to pinpoint access problems and access needs. Ideally, this process is computerized in order to save time. A simple function could directly use the data from the Accessibility Data Base to calculate the value of the accessibility indicators.

Sometimes it is necessary to include weighting factors if not all variables are considered equally important or if the planner wants to involve people to assess the relative importance of different variables. In doing this, the entire process of calculating indicators becomes more participatory but unfortunately also more complicated.

Once calculated, the indicators need to be incorporated in accessibility profiles, summaries or reports and can be used to:

- Categorize or rank villages or groups of villages according to their level of access;
- Compare the level of access to a good or to a service between sub-districts, districts and provinces;

- Assess the relative significance of access to each facility;
- Relate the levels of access to defined national, regional or provincial standards;
- Monitor the development within or between geographical areas and sectors:
- Evaluate the impact of access improvement projects and interventions.



The following example shows the calculation of Accessibility Indicators in 3 different countries (Philippines, Laos and Cambodia):

It appears that the Philippines is using the simplest indicators, which are just a function of two variables: people and travel times. For example, if a village has 350 households and it takes, on average, 30 minutes to travel to the nearest market used by the village population the Accessibility Indicator is calculated as 350 * 50 = 17,500.

The process in Laos is more complicated as the following box shows:

Calculation of Indicators

The primary village data is translated into a set of indicators which relate to the specific sector under consideration. The following 7 indicators, for example, are determined for the water sector:

Number of people in the village
Type of drinking water system in the village
Average water collection time
Type of traditional source
Perceived water quality
Villager's perceived problems
Villager's perceived priorities

These indicators are qualitative or quantitative assessments of different circumstances. The indicators used by IRAP Laos are rated from "0" to "4". "0" means relatively good circumstances and "4" means relatively bad circumstances. A complete set of indicators and their ratings for the water sector could be presented as follows:

An Example of Water Indicators

Village	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
01	3	2	1	2	3	2	0
02	2	2	2	2	1	2	0
03	3	2	2	2	1	4	1
04	3	0	4	4	0	0	0
05	2	0	3	4	3	0	2
06	3	4	1	2	3	4	0
07	3	2	2	2	0	2	0
08	3	4	2	2	4	4	4
09	3	4	1	1	3	4	0
10	3	4	1	2	3	0	4

The following table identifies the different classifications and ratings used in the calculation of the indicators used in the example presented above.

Not all indicators are equally important. Some indicators may be more important than others. Different indicators should therefore have different weights. In Laos, local Government officials, as a group, therefore decide on the different weights of the indicators. Individual participants first assign different weights to the different indicators based on their own preferences and perceived importance and afterwards a group average is calculated. Once the indicators and their weights are known participants calculate the score for each village. The following formula is used hereby:

$$7$$

 Σ Indicator Weight * Indicator Rating = Village Score I = 1

A higher village score indicates a higher priority to do something; in this case to identify an intervention to improve access to drinking water.

Access to primary health care, primary schools, markets and roads are assessed by a similar procedure. For income generating facilities the situation is more complex

The process used for calculating indicators in Cambodia is somewhat similar to the process in Laos. In Cambodia however planners attached greater value to the perceived problems and priorities of the communities and calculate an overall village Accessibility Index, which is a composite indicator of 4 sector indicators.

It seems that after comparing the different procedures, the Philippines process is the least complicated one. The Philippine procedure basically relates the number of households who need access to services, goods and facilities to the time it presently takes to get to them. The basic formulation of the indicators involves simple multiplication.

Rating of Indicators - Water Sector

DRINKING WATER

Indicator 1: Number of People in the Village

rating Classification

1 Villages < 150 people 3 300 <= village <= 450 2 150 <= village <= 300 4 Village >= 450

Indicator 2: Type of Drinking Water System in the Village

rating Classification

Only Improved Source of Water 4 Only Traditional Source of Water

2 Both Traditional and Improved

Indicator 3: Average Water Collection Time (Round Trip)

rating Classification

1 5 Minutes or Less (X<=5) 3 20 Minutes or Less (10<=X<=20) 2 10 Minutes or Less (6<X<=10) 4 More than 20 Minutes (X>20)

Indicator 4: Type of Traditional Source

rating Classification

1 Spring 3 Rainwater 2 Shallow Dug Well 4 Stream, Lake

Indicator 5: Perceived Water Quality (Dry and Wet Season)

rating Classification

0 Good Quality in Both Seasons 3 Good in Wet Season but not

Good in Dry Season

1 Good in Dry Season 4 Not Good in Both Seasons

but not Good in Wet Season

Indicator 6: Villager's Perceived Problems

rating Classification

0 No Problem 4 Big Problem

2 Minor Problem

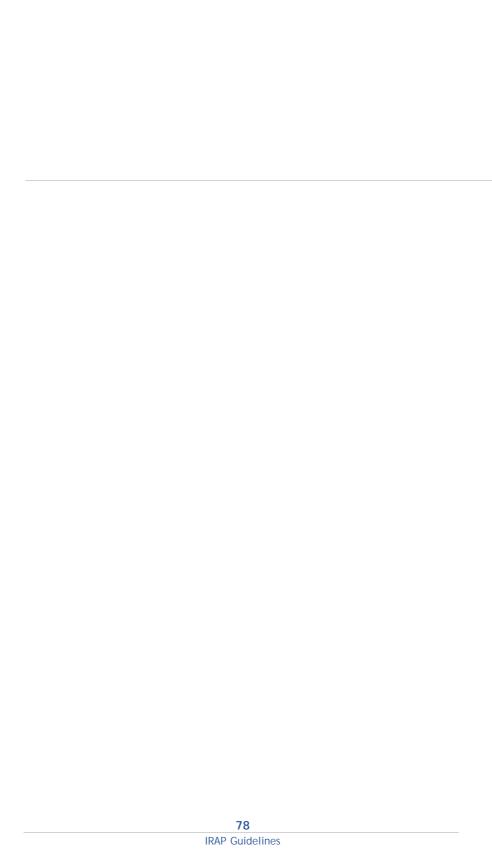
Indicator 7: Villager's Perceived Priorities

rating Classification

0 Not a Priority Project 2 Second Priority 1 Third Priority 4 First Priority

Some planners argue that it is necessary to include more qualitative factors and/or include weighting factors if not all variables are considered equally important and involve local people to assess the importance

of different variables. As mentioned before, in doing this the entire process of calculating indicators become more participatory but unfortunately also more complicated.



The Prioritization Process

Objective

The main objective of this activity is to identify investment priorities. This is usually done during a prioritization training/ workshop (also referred to as the T-2 Training described in the previous chapter). The overall objective of this training is to train local level planners in the practical application of IRAP with the emphasis on the use of IRAP planning tools: the ADB, the accessibility indicators and mapping. It involves the analysis of data, calculation of indicators and interpretation of maps to allow a comparison of different levels of accessibility between villages and across sectors. In doing this the participants review and analyze data and use indicators and maps to identify village priorities based on a lack of or poor access.

Having said all this, the identification of priorities can never be an entire mechanical, computer programmed, process based on indicators and maps only. The indicators and maps are merely tools to guide local

planners in their prioritization.
The planner's knowledge
and understanding
of local
characteristics,
constraints
and realities
also may
have a role to
play in this process.

The end result is a list of village priorities by sector. In fact, villages are ranked according to their levels of inaccessibility. The priority villages are villagers that have a relatively large number of people affected (by poor or a complete lack of access) and have generally poor access to facilities, goods and services.

Preparatory Works

The following inputs are required for the prioritization process:

- The Accessibility Data Base (ADB)
- 2. The Accessibility Profile
- 3. The Accessibility Indicators
- 4. The Maps
- Local Technicians and Planners (Local Knowledge)

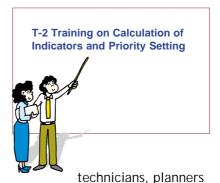
It needs to be emphasized here again that the prioritization exercise is not a pure machinelike process as it requires skilful judgments. The local planners understanding of the area as well **Training** as his/her capability of using certain analytical tools are equally important in this exercise.

The processed information contained in the ADB is presented to the participants in the Prioritization Training (also referred to as the T2-Training) wherein the needed tools (accessibility indicators and maps) for prioritization are also introduced. The tools provide a quick and systematic procedure to identify priority villages for improving access. The accessibility indicators enable planners to rank villages in order of accessibility or better lack of accessibility. The maps provide a simple means to visualize accessibility and identify so-called catchment areas.

The analysis of the data and the identification of priorities is a time consuming process if all has to be done manually. It is recommended that some data processing is done prior to the prioritization exercise to avoid unnecessary long sessions on the manual mathematical calculations of averages, sums etc.. It is suggested that the IRAP planning team does most of this data processing before going to a province, district or municipality to conduct the prioritization workshop. Examples and some hands-on exercises should be

given during the workshop to demonstrate and guide the participants through the technical process.

A standard training course has been developed and a set of training materials and modules exists. This training has to be conducted for key people at the local government level, including



and local decisionmakers. The main objective of this training is to identify investment priorities and build local capacity to use maps, data and indicators to identify priority villages for improving accessibility.

This training is one of the most important activities in the entire IRAP process. Local people are instructed on how they could use the IRAP prioritization process in identifying sector or village priorities. It is important that experienced IRAP planners conduct the training. Prioritization of investment priorities is a delicate activity and it is important that stakeholders

work together on a consensus. The IRAP tools will merely facilitate this process.

At the end of the training, participants will have produced concrete outputs in terms of sector and village priorities for their particular areas. Materials such as statistics, maps, indicators and priorities are now available and understood by the participants. As a last activity of the training, participants will have to be instructed and guided how to present the outputs, findings and recommendations to an audience. This mechanism is used to solicit support for the interventions proposed. This activity of communicating to a public is an additional important element of the entire training programme. It also demonstrated the skills that have been developed during the earlier stages of the IRAP application. The main objective here is to inform the audience about the findings and recommendations of the IRAP application in a particular district or municipality and to

ment offices together with local decision-makers. But also NGOs and donor agencies have requested their staff to be trained in the unique prioritization procedures that IRAP provides.

Implementation

Village priorities are identified by combining the two planning tools, mapping and accessibility indicators, with the local planners' knowledge of the area. Villages are ranked and the worst off villages, in terms of accessibility, are identified and prioritized for interventions. Technical staff participating in the training/workshop should work together for a period of about 3 days to analyze the accessibility situation by sector and identify village priorities.

The main purpose of this entire activity is to teach local planners the skills of priority setting and presenting these priorities to solicit support. With the new technical skills local planners could further prioritize back in









Local politicians receiving a message

solicit further support for improving accessibility. The typical participants in the course are technical staff from local governtheir planning offices applying the same tools and techniques.

The prioritization process could



result in an action plan (see chapter 12) which summarizes the procedures followed and ranks the village

priorities identified. This action plan is important in that it confirms the priorities identified and presented earlier. The action

plan should be distributed to the institutions involved in improving rural accessibility. Later on, it could also function as a tool to evaluate the success of the local programme, in terms of priority problems being addressed.

The following box summarizes the content of a typical T2-Training Manual used in the Lao PDR.

This volume contains the reading materials for a complete T-2 training on integrated rural accessibility planning. The different module delivery plans are prepared by the individual resource persons conducting this T-2 training.

Module 1: Integrated Rural Accessibility Planning

Module 2: Earlier IRAP Activities Module 3: Access to Water

Module 4: Access to Primary Education
Module 5: Access to Primary Health Care

Module 6: Rural Roads Module 7: Access to Markets

Module 8: Sector Priorities Module 9: Presentation





The Identification and Design of Interventions

Objective

The prioritization exercise described in the preceding chapter resulted in a ranking of priority villages where access needs to be improved. The activity however did not yet identify what could be done to improve access or how interventions could best be implemented.

Once a village has been identified as a priority village, local planners together with the village representatives need to identify what type of intervention would improve accessibility in a particular sector. If a village was identified as a priority for improving access to primary health care for example, the question that remains to be addressed is: what needs to be done to improve access? This could mean the construction of a health centre in the village, assigning a full-time nurse to a nearby clinic, improving the road or building a bridge.

It is important that this identification process is based on the IRAP strategy of having two main categories of access interventions, namely interventions that improve mobility such as roads, bridges, tracks and trails, transport services and



low-cost means of transport and interventions that improve the distribution of facilities and services such as water supplies, schools, markets and health centres.

It is equally important that the identification of these access interventions is done in a participatory manner with villagers and local government officials both participating. Villagers will have a more narrow focus and mainly consider their immediate access needs while local government officials will look at it from a broader geographical and technical perspective. Also, local government officials will contribute technical assistance and funds to implement the projects identified and often need to make a selection of projects to be supported.

After identifying the most appro-

priate and feasible intervention, the same people need to work



together to design the project. This could be a simple project write-up or project proposal using standard format. It is important however to include measures that will minimize cost and maximize impact. It is here that the use of local resources including labour, raw materials and products needs to be maximized.

Preparatory Works

Once the priority villages are known, village representatives need to be invited to a training/ workshop on project design. Local government officials and local technicians representing the different sectors should also participate in this workshop. The main objective of the workshop is to identify the most appropriate intervention and to prepare a project design. A standard process needs to be developed (also referred to as the T-3 training) for this workshop and training materials need to be available. People in the IRAP planning team need to be identified to become specialists in this activity. The main instruments used in this training will be a problem/objective tree and a standard project format.

These instruments often need to be developed and examples should be ready prior to the conduct of training.

Project design includes the preparation of a cost estimate. It is recommended to use standard specifications, norms and costs to do this preliminary project design and these specifications, norms and costs should also be available prior to the workshop.

🇯 Training

A two to three day workshop (the T3-Training) should be sufficient to guide the participants through the project identification process and have them produce a set of basic project proposals. The village priorities are the main input for this training. On the basis of a proper problem analysis it should be possible to identify in a relatively short time the most appropriate solutions to existing access problems. Once these solutions and the objectives of a possible project are known, the participants will formulate the activities to achieve the objectives as a project.

The three main training documents that comprise the T-3
Training therefore include a module on identifying interventions, a module on designing interventions and a module on cost guidelines and technology.
Experienced members of the IRAP team should specialize to conduct this kind of training.

Implementation

In all activities, village people need to work together with local officials to address the **what** and **how** questions.



The combined village representative and local government staff team will work sector by sector to identify the most appropriate and feasible intervention during the first part of the workshop. It is

recommended that the problem/objective tree analytical method will be used to first identify the causes and consequences of having poor access in a particular sector and subsequently identify the interventions necessary to improve access and the expected results.

Once a specific intervention has been identified, the workshop participants will prepare the project design or project proposal. They will do this by using a standard format and will continued to be guided by the IRAP team.

The end result is a project design or project proposal that can be submitted for funding or implemented if the resources are available.



Action Planning or Integration into the Local Planning System

Objective

A "standard" IRAP procedure usually ends with the identification of individual projects. It concludes with what has to be done where and how to address priority access problems. The interventions or projects are described in project proposals which can be submitted to a Government agency, NGO or external donor for funding. An intermediate step however would be to combine all projects identified and develop a more general strategy to improve accessibility in a certain area. The IRAP team could formulate an access specific investment plan: an "Action Plan for Improving Accessibility" (APIA)". This

would be a master plan for improving access in a certain area.



The APIA could be disseminated to government organizations, development agencies and private investors informing about the general socio-economic situation of an area, development goals, targets and strategies, plans, projects and resources needed to improve rural accessibility.

An APIA combines the different accessibility improvement projects identified. The APIA is an action plan and should have a certain time frame and identify strategies, priorities and resources to improve access.

One purpose of an APIA could be to seek donor support for interventions that can not be funded locally or nationally. Another purpose would be to use the plan as a reference for monitoring access improvements in a particular area.

IRAP however is a planning tool and not a parallel development planning process. It enables a planner to identify a set of interventions to meet access needs. It deals with a limited number of sectors only and often

acts as a complement to other development planning procedures and initiatives. Instead of producing an APIA, the IRAP teams may actively assist local government units or sectoral line agencies to incorporate the identified projects into their regular integrated or sectoral investment plans to ensure future local/ national funding for the proposed *** access improvement projects. The following figure shows three different options. Sometimes funds have been pre-allocated and project proposals will be financed immediately. A second option relates to action planning. Projects to improve access are included in a master plan for accessibility improvements and could be taken up by a potential donor or Government agency. A third option is that identified projects are included in the annual investment plans and enter the regular planning and budgeting process of a country with the possibility of having Public Investment Funds allocated for implementation.

An action plans for improving accessibility is not necessarily required. Often it is more effective to integrate the projects identified into existing planning systems instead of preparing additional plans. Different sector projects could be integrated into sector plans or strategies.

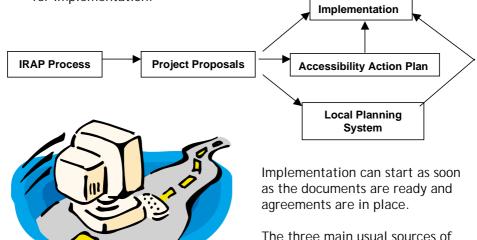
Preparatory Works

Three different options have been identified:

- Funds have been earmarked before project identification/ design and fund sourcing is no longer necessary.
- Identified priority projects will be integrated in sectoral investment budgets, plans or strategies.
- 3. Area-specific action plans (APIAs) will be produced.

The first option requires no additional work on behalf of the IRAP team or local planner.

Government funding are local



government funding, sectoral (national government) funding or undistinguished congressional funding. To access these funds, local or national decision-makers need to be convinced about the value of proposed interventions. Local planners with support from the IRAP team should seize an opportunity to present the



implementation of the IRAP process in their area and the resulting recommendations and projects to decision-makers. These presentations need to be well structured and a script should be prepared beforehand. Earlier IRAP outputs such as maps, priority sheets, inventories, statistics, profiles etc. should be used to clarify the situation and visualize reality.

If the purpose is to prepare an action plan (APIA) it becomes necessary to identify targets. What does the plan seek to achieve over a certain time in a specific area. Targets have to be set for a certain time frame: what does one realistically want to achieve over a certain period of time. Targets have to be realistic, achievable and measurable. Projects are means to achieve these targets.

APIAs can be used to monitor progress as well. The IRAP indicators show priority sectors and/or priority villages for improving accessibility. The indicators could be related to norms, averages or national targets and a "shortfall" could be measured and used to set sectoral priorities or monitor progress.

The process of setting targets should be participatory. Local Government agencies and national line agencies represented at the local level should participate in this exercise.



****** Training

Several types of training may be necessary for different types of agencies involved.

Local planners may need to be trained in basic communication/ presentation skills to be able to effectively communicate priorities with the local or national decision-makers.



If the purpose is to produce action plans then an entire new training course on action planning (the T-4 Training) needs to be developed and conducted. Local planners should be instructed and guided in the preparation of area specific action plans.

Implementation

The presentation of IRAP priorities and identified projects best takes place in an open forum. The planner presents the priorities to the people who have the power to make decisions. Decision-makers have then the opportunity to respond. The result will be a participatory process where different stakeholders can contribute opinions and support.

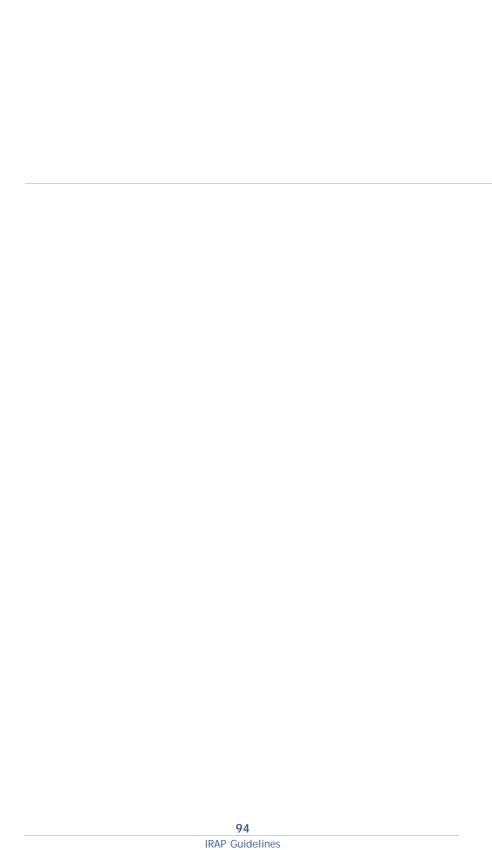
APIAs are to be produced by or in close consultations with

government agencies. An APIA usually summarizes data and key statistics in a simple and user-friendly manner followed by planning targets, strategies and projects relating to the particular sectors where accessibility is an issue.

However it needs to be emphasized that the real success of applying IRAP as a government planning tool depends on its integration into the existing planning structures rather than creating parallel structures.

The ultimate objective of the entire IRAP exercise however is to improve accessibility. This requires that projects identified will be implemented and that plans will not just be shelved. This requires marketing and communication.





Monitoring and Evaluation

****** Objective

The main purpose of IRAP is to produce projects and other interventions that can be carried out effectively to improve rural accessibility. Local planners are usually not directly involved in the implementation of the projects. This is often the responsibility of the sectoral line agencies with or without the help of the private sector. The responsibilities of the local planner often ens once the plans and projects have been prepared and proposals have been submitted or are presented.

At the implementation stage the planner could have an additional role. He may be given the responsibility to monitor the actual implementation. Or, once the work is done, he may be called upon to evaluate the project's success.



Monitoring and evaluation are closely related and often grouped together because they take place towards the end of the planning cycle. Monitoring and evaluation however are not the same thing. It is important to understand the different functions.

Monitoring relates to project monitoring and program monitoring. The first is a project management tool and is usually the responsibility of the implementing agency. The latter is more general and is part of the IRAP planning cycle. Access improvements need to be documented and progress in improving rural accessibility needs to be reviewed as such. This step in the IRAP planning cycle is referred to as program monitoring: does access improve, and if yes, in what sectors and to what extent?

Evaluations are intended to find out whether a specific project has been successful or not, and why or why not. Evaluations comprise the final step in a planning cycle and information and lessons learned will feed into the next cycle. Evaluations are therefore



important not only to measure the success or impact of a project but also to guide future investment decisions.

Preparatory Works

Both monitoring and evaluation involves the collection of information before the project begins and then as it is carried out and after the project has been completed. The IRAP data collected at the beginning of the cycle and the access indicators can be used as base-line data. However for evaluation purposes often more specific and detailed information is needed. This information can be collected through a household survey in those villages that are expected to benefit from the access improvement projects. This information can then be compared with similar information collected after the completion of a project to assess the project's impact.

Various conventional evaluation techniques exist with different levels of sophistication and data requirements ¹⁷. For IRAP purposes, a simple evaluation to measure impact on accessibility usually suffice.

To prepare for such an evaluation one needs to first establish a base line data-base. Household level data needs to be collected through a household question-

naire in the villages that are supposed to benefit from the proposed intervention. This information should include data on assets, travel characteristics, use of services, preferences and perceived benefits. This data represents the before project situation. In order to measure impact one needs a similar data set for the after project situation. A project impact however often needs time to become "visible" and the timing of the after completion survey is important. To evaluate impact one needs to compare the before and after project situation. This becomes a difficult process if not all impact is directly attributable to the project but the result of some external factors as well. It is easy to measure the impact of a footbridge on travel time to a health clinic for example. Travel times are reduced as soon as the footbridge is completed. It is much more complicated to measure the impact of the footbridge on the overall health status of the people. Other factors, such as a health awareness programme, might have contributed to an increased number of visits to the health clinic which in turn is reflected in improved health statistics.

Training

In order to perform monitoring and evaluation functions, the local planner needs to undergo some basic training in monitoring

¹⁷ It is not the intention to describe these different techniques in this guide.

and evaluation concepts (T-5 Training). The trainees should preferably, hands-on, contribute to the development of a monitoring and evaluation system, which will provide them

T-5 Training on Monitoring and Evaluation

whether certain targets can be met or not and, if necessary, take appropriate corrective actions. Targets may have to be readjusted if they prove to be too ambitious. The following table shows an example of this process.

In order to monitor achievements and evaluate impact, the planner needs to collect additional data during and after project implementation. It is recommended that the same data gathering techniques and tools will be used that were used during the earlier data collection activities.

Sector	Access Indicator	2000	Target 2002	Target 2004	Actual Achievement (31-12-2002)
Water	Percentage of households with access to all-year round portable water	20%	30%	40%	23%
Education	Average travel time to elementary school	350 min.	300 min.	250 min.	340 min.
Rural Roads	Villages with all-year round road access	32%	46%	60%	46%

feedback on how specific access projects are actually going and on how access in a certain sector is being improved. Below is an example of a very simple, straightforward, impact evaluation of a rural road in Lao P.D.R.

Implementation

Planners often use quantitative indicators and targets to monitor progress in improving accessibility. This process will also enable IRAP planners to assess



A participatory rural infrastructure project carrying out interventions to improve accessibility in two selected zones comprising 19 rural villages started in Oudomxai Province, Lao PDR, in 1996. Most participatory planning and implementation activities took place in 1997 and 1998. Amongst the interventions were the construction of two roads. two small-scale irrigation schemes and two village water supplies in Phone Home Zone and the construction of three schools and three village water supplies in Mok Wen Zone. Other interventions included the preparation of village action plans, sector action plan, selected land-use planning in Mok Wen Zone and different capacity building exercises. A baseline study was conducted in the two selected zones.

The local government with support of ILO IRAP staff conducted a simple impact evaluation. It attempts to assess the impact the project has had on accessibility and livelihood in Phone Home and Mok Wen Zones. The fieldwork for this impact evaluation study has taken place in 1999, six months up to a year after completion of implementation of the different projects prioritized and implemented by the local communities. The methodology and some of the main findings of this evaluation for Phone Home are summarized below.

I. Methodology

For this impact evaluation three different tools were used:

- household surveys
- village participatory meetings
- traffic count

- household surveys

In 1996, at the start of the project, household surveys were conducted in all villages of Phone Home and Mok Wen Zones. A 10-15% sample was drawn and interviewers were asked to select households of different socioeconomic status to represent the village as a whole. Each village consists of one or more village units, and at least one household was interviewed in every unit.

In 1999 the household surveys were repeated. The same questionnaire was used and the same persons were interviewed.

- village participatory meetings

In 1996 village participatory meetings were held in the villages involved to find out about villages' problems and priorities. These meetings included PRA techniques ¹⁸ like mapping and priority ranking. In 1999 the team went back to these villages to discuss to what extent the village priorities had been realized. Future plans for the villages were also discussed, mainly focussing on activities the villagers intend to undertake by themselves.

- traffic count

Both in 1996 and in 1999, a year after the completion of road construction, a traffic count was carried out. For 14 days all types of vehicles and foot passengers passing the Phone Home road were registered. In both years the

traffic count was carried out in the same season, towards the end of the dry season.

II. Phone Home Zone

- results of household survey

The average household size in Phone Home increased from 5.7 in 1996 to 6.3 in 1999. Over the period reported on, the percentage of households primarily dependent on income from agricultural production has remained 97%. The amount of landless households decreased considerably, from 38% to 19%, while the average amount of hectares owned by the households remained almost the same. Over the period under review, new lowland rice fields have been created and taken into use by the villagers.

In Phone Home the amount of cows and buffaloes owned by the villagers has decreased. According to IRAP/ESCAP staff working in this area, many families have sold livestock and bought rice mills, hand tractors and different means of transport instead. Table 2 confirms these observations.

The average household income in 1996 was as low as 179.583 kip. The reported average income in 1999 is 634.531 kip and the increase is mainly due to an increased selling of agricultural produce. To get an idea of the trend in purchasing capacity of the villagers though, these figures will need to be corrected for inflation. For the villagers in Phone Home the increase in the

Table 1: Livestock ownership

	average number of heads (1996)	average number of heads (1999)
cattle	1,4	0,9
buffalo	1,9	1,4
pigs	2,0	2,2
poultry	10,9	15

price of rice is probably the most important factor. In 1996 a household could buy 225 kilos of rice for 179.583 kip, while in 1999 634.531 kip would buy 253 kilos of rice. This is a real increase of 12,5%, which can most likely be attributed to the project interventions.

Table 2: Other possessions

	percentage of households owning (1996)	percentage of households owning (1999)
boat	0	0
motorcycle	0	0
bicycle	17	23
cart	7	12
rice mill	4	56
fish pond	19	42
sewing machine	17	26
generator	4	2
tv	0	0
radio	48	43

The community development workers used the AIC (Appreciation, Influence, Control) techniques also being used, amongst others, in Thailand.

Table 3: Sources of income

	average annual cash income (kip) (1996)	average annual cash income (kip) (1999)
sale agricultural products sale livestock casual labour regular employment	49.457 84.674 1.429 7.655	355.930 213.139 25.511 24.836
loans cash remittances business other	17.095 476 15.321 3.476	9.302 0 5.813 0
total	179.583	634.531

Due to the construction of improved water systems the number of villagers using a stream, shallow dug well or spring as their main source of drinking water decreased. The average water collection time though increased from 6 to 10 minutes.

more productive plots ¹⁹. Obviously this would mean a reduced pressure on uplands for shifting cultivation.

Table 5: Average size main plots

	average size (hectares) (1996)	average size (hectares) (1999)
plot 1	1,1	0,63
plot 2	0,8	0,82
plot 3	0,7	0,67

The following table shows the different crops produced and sold in Phone Home. With the construction of the road through the area, the selling of agricultural produce has become much easier. Traders from Meuang Xai often visit the area and buy produce from the farmers in the villages. Over the last two years the villagers have experimented with

Table 4: Water supplies

source	percentage of households using in dry season (1996)	percentage of households using in wet season (1996)	percentage of households using in dry season (1999)	percentage of households using in wet season (1999)
shallow dug well/spring	56%	78%	21%	56%
stream	43%	17%	40%	5%
spring fed gravity	0%	0%	30%	30%
improved well	1%	5%	9%	9%

The average number of plots cultivated decreased from 3,9 in 1996 to 2,3 in 1999. Moreover, the size of the first plot decreased from 1,1 to 0,63. A logical explanation is that more families have access to paddy fields, which would normally be smaller but

different cash crop. Sesame and garlic have been tried out but were not always that successful.

The improved irrigation schemes could better regulate the water supply during the wet season and, if accompanied with appropriate extension services, allow for a second crop increasing annual yield drastically.

By now most farmers concentrate on the cultivation of peanuts, for which they can receive a very good price. It appears that improved road access induces traders to visit the area and buy products at the farm gate. In 1996, 67% of the households were marketing crops. Mostly they had to travel outside their village to sell their products. By now, 86 % of the households is

Table 6: Crops and their use

crop	1996 hh growing	hh selling
rice	100%	47%
maize	17%	0%
peanut	62%	60%
cassava	40%	11%
chili	40%	11%
sesame	26%	26%
taro	19%	2%
banana	9%	2%
egg plant	19%	0%
cucumber	2%	0%

crop	1999 hh growing	hh selling
rice	100%	60%
maize	42%	21%
peanut	75%	72%
cassava	5%	0%
chili	33%	30%
sesame	14%	14%
taro	9%	7%
banana	9%	5%
egg plant	16%	12%
vegetables	2%	2%
garlic	5%	2%
oranges	5%	5%

marketing crops, mostly in the village. Only 26% of the households travel outside their village to sell, which confirms the observation of traders travelling into the area.

The amount of households trading other than agricultural products has decreased from 55% to 12%. Different explanations are possible for this trend. One of them is the effort the villagers put in the production of peanuts.

School attendance has increased with an estimated 10%, while the visits to the dispensary have decreased with an estimated 18%. This latter trend is remarkable since the ADB dispensary was completed in 1996. Improved health awareness and practice, demonstrated by an increased medical consultation in the area, might have contributed to this decline.

- village participatory meetings In the 1999 village participatory meetings the villagers discussed the achievements in the development of their village over the last

Table 7: Use of social services

	1996	1999
households with children attending school	64%	70%
households visiting dispensary in year before interview	62%	51%
household making use of medical teams	87%	95%

three years, as well as plans for the future ²⁰. The following table

During the 1996 Village Participatory Meetings the villagers developed a vision for future development of their community and identified priority projects to be implemented by the community with or without assistance from the outside world.

highlights the main achievements since 1996 and the future devel-

opment projects the villagers plan to undertake by themselves.

Table 8: village participatory meetings

village	already achieved	future plans
Phone Home	 road expansion paddy field area increased peanut production increased number of fishponds village fencing shop opened 	- tree planting - improve village fencing - latrines
Phieng Xay	- land rights - water supply (ADB) - school (ADB)	school repairsmaintenancewater supply
Vang Mon	- road - increased peanut production	village fencingirrigation
Na Chang	roadirrigationincreased cash crop production	- village fencing
Houay Lieng	increased number of fishpondsincreased number of rice millsincreased number of carts	- medicine bank
Houay La Vong	expansion paddy field areaincreased number of fishpondsincreased number of rice mills	- village fencing - stimulate saving
Houay Khai	roadimproved water supplyincreased number of fishpondsmedicine bank	motivation school attendancevillage fencing
Sanang Pi	roadincreased number of fishpondsincreased number of rice mills	school repairsmaintenancewater supply
Houay Tam	irrigationincreased peanut productionincreased number of fish pondsincreased number of rice mills	school repairslatrinesvillage fencingroad maintenance
Houay Hia	expansion paddy field areairrigationincreased amount of rice millsmedicine bank	motivation school attendancevillage fencinglivestock grazing area
Houay Top	 water supply expansion paddy field area increased number of fish ponds increased number of rice mills shop opened 	- village meeting room - village fencing

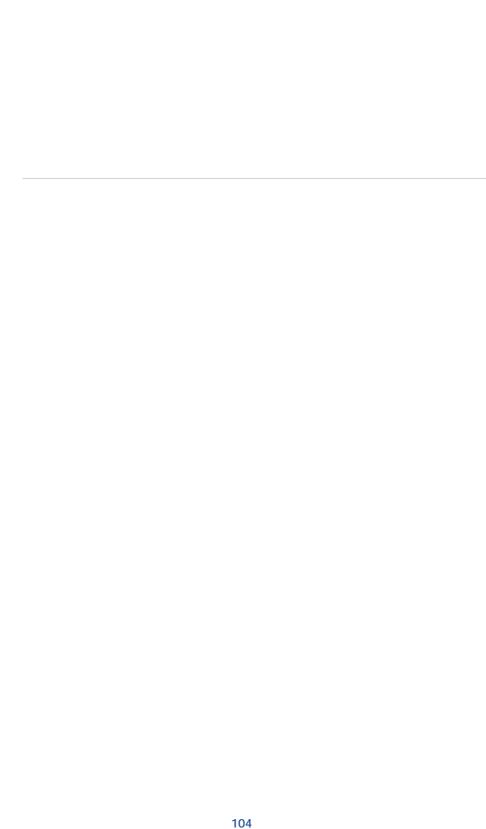
- traffic count

Table 9 summarises the average daily traffic on Phone Home road. It appears that fewer people walk and that traffic levels have increased drastically. This increased traffic consists mainly of newly purchased motorcycles or bicycles, traders coming in and

transport services linking the zone to the provincial capital. The socio-economic benefits of these increased traffic volumes are obvious and include time savings, improved access to health, education and markets and increased opportunities to sell produce.

Table 9: traffic count

type of passenger/vehicle	average number per day passing (1996)	average number per day passing (1999)
foot passenger	138	113
bicycle	2.4	16.4
motorcycle	1.1	10.4
tuktuk/samlo	0	10.0
handtractor	0	2.3
private car	0	0.3
pick-up	0.1	1.3
truck	0	1.3



IRAP at the Village Level

Background

The Guidelines on IRAP describe a process of identifying investment priorities at higher than village level (province, district or subdistrict). These geographical areas have in common that they consist of a number of villages. Village data and priorities are fed into the process of investment prioritization but priorities are set across villages and not within the village. Village priorities are collected during the village interviews with key informants (see chapter 5).

This last chapter is about rural infrastructure planning and community participation at village level. The main purpose is to introduce a more sophisticated method of deciding on infrastructure priorities at the village level. Community participation is a process whereby beneficiaries influence the direction and execution of development projects rather than merely receiving a share of projects benefits. It has been demonstrated time after time that communities are perfectly able to identify their real problems and to define interventions that are best suited to their real needs (see chapter 1).

Top-down planning of small-scale rural infrastructure projects without consulting the villagers has often proven to be an ineffective approach and may result in ineffective projects and a waste of resources. Rural infrastructure projects should address the real needs of the local people and should optimize the use of local resources from a cost perspective. To the extent possible, they should be planned, designed, implemented and maintained in the communities, by the communities and for

Community participation in (rural infrastructure) development is beneficial in that it:

the communities.

➤ Gives local people a direct and active stake in organising themselves to develop their economies

- Encourages the mobilisation of local resources such as land, labor, savings, assets, plus indigenous knowledge of specific local conditions such as environmental and socio-cultural norms
- ➤ Helps build the capacity of the people to effectively plan and implement projects
- Increases community control over resources and development and promote greater self reliance
- > Enhances the sense of community ownership needed to ensure maintenance of completed projects
- > Encourages more equitable distribution of benefits because project management is accountable to a more representative community"

Effective community participation requires communities "ready" to participate and government departments and agencies "ready" to work with communities. The IRAP approach now seeks to harmonize community participation with standard local level infrastructure planning procedures and to come up with an integrated approach.

Many books have been written about community participation and related subjects. It is therefore also not the purpose of this chapter to contribute to the ongoing conceptual discussion but merely to identify possible procedures to augment the level of participation in rural access

and infrastructure development efforts within the context of the IRAP planning cycle.

The World Bank maintains the following definition "participation is a process through which stakeholders influence and share control over development initiatives

and the decisions and resources which affect them ²¹ "

The World Bank furthermore affirms that

"the participation of beneficiaries is central to the effective delivery of rural infrastructure; for participation to be successful, beneficiaries must be involved in decision making related to planning, design, implementation, operation and maintenance of rural infrastructure; they must also contribute in kind or cash at such a scale as to gain a sense of ownership of the infrastructure and a commitment to operating and maintaining it".

It is clear that the stakeholders should be involved in all steps of the planning process and project cycle. It is necessary however to take account of local reality. Changes should not be too abrupt and it is recommended to take small incremental steps towards

World Bank Participation Sourcebook

change. We can not expect a more flexible bottom up process to suddenly replace an existing, more rigid, top-down process. Pilot projects could assist in building local capacity and raising awareness about the benefits of community participation and could serve as an example for other areas.

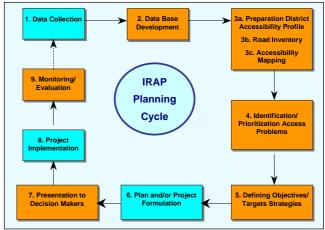
The objective of this chapter is to introduce a demonstrated procedure for assisting rural villages to better participate in the planning, design and implementation of small-scale rural infrastructure projects and to point out where and how this process can be integrated in the standard IRAP planning cycle.

It seems that communities could effectively be involved at three different stages:

- Planning
- Design
- Implementation/Maintenance

Figure 2 shows how these activities relate to a generic planning cycle.

Figure 2: A Generic planning cycle with Rural Access Planning integrated in it ²²



This chapter will discuss community participation during the planning and design stage of the projects.

Planning

Community participation has to be seen from the perspective of the community and from the perspective of the local Government. Communities are mostly concerned with their own environment "the village" and identify priorities primarily to benefit the village inhabitants. District authorities, on the other hand, have a wider perspective and identify priorities for a number of villages. In addition, they consider economics of scale and areas of influence of roads. health centers and schools. From a community point of view, for example, having a health center

Planning cycles look slightly different in different countries.



in their village may seem a first priority but from a district point of view this may not be a priority at all.

IRAP has evolved as a tool to primarily assist local Governments in taking decisions concerning rural infrastructure investments. The process however, in whole or in part, could also be applied by donors and communities to identify and prioritize access improvement projects including rural infrastructure.

The IRAP process encourages local level planners to involve communities in the identification, design and implementation of projects. Maintaining a dialogue with communities during all stages of the planning process, identifying needs, defining solutions and priorities, selecting projects and carrying out the projects identified, is necessary to ensure the full involvement of people. Active community participation however, at all stages of the planning process, is not always possible. A district may count as many as 50 to 100 villages. District offices are often poorly staffed and it is unattainable for district staff to have a community dialogue with

every village. IRAP therefore recommends a two step approach. Use the standard IRAP Village Survey to collect base data for every community on socioeconomic characteristics, access, problems and priorities. This data can be analyzed and indicators describing the situation in a village can be developed to identify priority zones or prepare a "shortlist" of priority villages. Once the priority villages have been identified it is recommended to use a proven community development technique to confirm the priorities and involve the communities in the further planning, design and implementation of projects.

Step 1: Collect data in all villages ⇒ Use IRAP Village Survey

Outputs

- Detailed data base
- Base information on village problems and priorities
- Village indicators

Step 2: Start the community dialogue \Rightarrow Use A.I.C.

Outputs

- Confirmed priorities
- Community participation in planning

IRAP Village Survey

The standard IRAP process is applied at the village level using a Rapid Rural Appraisal technique to collect relevant data. People's needs in this process are identified through a survey of the

community. Although people have the opportunity to identify problems and priorities for interventions, in fact, the district authorities decide for them. Village participation at the planning stage is limited to a short interaction with the enumerators during the actual data collection exercise.

IRAP's traditional data collection tool "surveys" the community and collects a range of socio-economic and access data. Communities have the opportunity to identify their problems and express their priorities during a 3-4 hour interview. This information is feed back into the planning process at the district level without further involvement of the communities until the project design phase.

Appreciation, Influence Control (A.I.C.) ²³

A more detailed technique, developed in the United States and widely used in many countries, labeled "Appreciation, Influence, Control (A.I.C)", could be used to conduct village meetings. During this process villagers are involved for a longer time (up to one sometimes two days) and produce a future map of how they would like to see their village develop while identifying activities they could do by themselves and activities for which they would need external assistance. The A.I.C. approach is succinctly illustrated below:

Step 1: Identification of a group of villagers

Step 2: Dividing the participants into three groups; men only, women only, and a combined group of both men and women

Step 3: Each person drawing a map of his/her village in the present form and explaining it to his/her group

Step 4: Each person drawing a picture of his/her village as he/she would like to perceive it in the future. This allows the participants to give some thought to identifying ways and means for improving their quality of life through better infrastructure facilities and services in the village

Step 5: Consolidate all the drawings into a single picture of the village with all the details. This helps to enhance team spirit in the community towards achieving goals

Step 6: Each group listing its priority needs and identifying a range of activities that could be undertaken in the village to address those needs

²³ The World Bank Participation Sourcebook summarizes A.I.C. as follows "a workshop-based technique that encourages stakeholders to consider the social, political, and cultural factors along with technical and economic aspects that influences a given project or policy. AIC helps workshop participants to identify a common purpose, and creates an enabling forum for stakeholders to pursue that purpose collaboratively. Activities focus on building appreciation through listening, influence through dialogue, and control through action."

Step 7: Consolidate the three lists and asking all participants to arrive at a consensus on a single list of proposed activities for implementing in the village

Step 8: Dividing the proposed activities into three groups:

- Those which can be implemented at the village level;
- Those warranting the involvement of the public and/or private sectors
- Those to be implemented fully by the public and/or private sector

Step 9: Prioritizing the
 proposed activities

Step 10: Requesting each participants to indicate

the activities in which he/she is willing to participate and/or take the responsibility for its implementation and also provide details of his/her inputs

Step 11: Asking each group to elect a project manager who is entrusted with the task of preparing a work plan for implementation and presenting it to the village During the process, communities determine those activities they can undertake themselves as well as those activities which require assistance from Government or other external organizations. Both women and men are equally involved in the process.

The IRAP Village Survey and AIC technique are probably at different ends of the spectrum. They introduce different techniques to involve communities. The IRAP Village Level Key Informant Discussion is a quick, but shallow, approach to collect information on problems and priorities as perceived by the villagers while the A.I.C. approach offers a more sophisticated, but time consuming, procedure. It is difficult to say which method or which combination of methods is the best. This will ultimately depend on the overall circumstances and the objectives of a programme.

AIC has proven to be an excellent tool when the area of coverage is not too large, as is often the case in donor supported area-development projects. From the district perspective, the problem with

Table 1: Comparison between IRAP VIIIage Key Informant Interview and A.I.C. Technique

IRAP Key Informant Interview	A.I.C.
Consultation process	Participation process
Quick process (2-3 hours)	Slow Process (up to 3 days)
Inexpensive	Fairly expensive
Low demand on community	High demand on community (3 days
(half day participation of 6-8 key informants)	participation of many villagers)
Shallow process	In-depth process
Less gender sensative	Gender sensitive
Does not really raise expectations	Raises expectations
Minimal training of interviewers	
Extensive training of interviewers	

having to spend 2 days in 50 or more villages to find out about priorities is that it is very resource intensive. The following table compares some advantages and disadvantages of the two techniques.

Mapping

Mapping has always been a cornerstone of the IRAP process and should be an integral part of any village consultation process. The graphical representation of access characteristics in a given area can help in the identification and prioritization of access problems, facilitate the formulation of interventions and guide in the selection of the best development alternatives. The purpose of having the communities preparing the map is four-fold:

- to provide a clear picture of the (access) conditions in the village
- to help in the identification of (access) problems and in the formulation of interventions
- 3. to enhance the communication of information and recommendations to an audience
- 4. to evaluate the possible impact of projects

Village mapping is a "userfriendly" process, which can easily be understood by village people without any technical training. The map should reflect the actual situation in the village. The map represents the relationship between the villagers and the facilities and services they need. The map could visualize, for example, how the construction of a piped water system could improve the water supply for selected households or how the improvement of a trail could improve transport and access to schools, health centres and markets.



One of the main outputs from the A.I.C. process, indeed, is a consolidated village map built from the individual group maps and representing a consensus on what the villagers want and the beginnings of projects that they may attempt. Mapping exercises and the discussions they generate are generally helping the villagers to think more about access and development issues.

Villagers could, in addition, be asked to list the places they visit and purpose of such visits. They should draw maps and identify the places and the routes they travel. During this work they could identify the locations where they experience difficulties when travelling and solutions to the problems could be identified and

even prioritized from their point of view. Problems could be written on cards and could be moved up and down as a discussion proceeds and prioritization will be make through consensus.

Prioritization and Selection of Interventions

IRAP's traditional planning tools are used to prioritize interventions across villages. Communities identify their village priorities based on their perceived needs. The total resources necessary to implement these priority projects usually exceed the resources available in the community, from Government or from external donors. The "most feasible" or "most needed" projects should be selected by the community in a participatory manner.



Project implementation costs should be estimated before going into the detailed design work, in order to minimize expectations of the communities,

using information from identical interventions under similar conditions in other areas. After the costs have been estimated, a simple feasibility study could help the community to assess whether the proposed interventions are feasible by relating costs to the expected benefits.

Design

A detailed survey and design of the project should not be undertaken until a possible donor, internal or external, has been identified to avoid further raising existing village expectations. Participation in project survey and design may become counterproductive and jeopardize future initiatives if funding possibilities do not exist and designing projects remains merely an academic exercise.

Once the priorities have been identified by the community, a technical team needs to survey and design the projects. If funding possibilities exist then communities should participate in finalizing the design of projects. This participation should not be limited to an exclusive agreement on village contribution or local inputs but should include interaction on technical details and costs as well. With the cooperation of the local people, a design and a cost estimate for undertaking the proposed intervention needs to be prepared. The final design of the interventions is a social, iterative, process between experts and local people 24.

Villagers not always correctly prioritize their needs. Often people only consider the benefits of interventions and while prioritizing village needs, basic information about the cost and labour effort of projects is often not seriously taken into consideration. During the design phase however costs and local contribu-

tions are taken into consideration and project components may change or, sometimes, the complete project may be rejected and changed for something else.

To maximize the use of scarce

resources and optimize village ownership and sustainability of the interventions, it is recommended to maximize local contribution. This often includes inputs to be provided by the villagers at no cost. Their inputs have to be established through negotiations and this has to be formally agreed upon through a contract. Agreement with communities, often, are crucial for the success of community-based approaches. These agreements could be formal in the form of a contract or informal.

Willage contributions

People need to understand what they commit once designing a project. What does it mean in practical terms if the community, for example, commits itself "transporting the construction materials". The following excerpt coming from the World Bank's Participation Sourcebook illustrates this point: "The absence of sufficient "commitment" in many of the projects the bank finances comes, we believe, mainly from the external expert stance, in which small groups of experts ask the other stakeholders to commit

themselves to a project the experts have designed. Even if these stakeholders do so, they often have not learned enough to understand fully the commitment they are being asked to make. Nor have they learned enough to judge their ability individually and collectively to fulfill it. We need to be clear that commitments made under such circumstances cannot be relied on ²⁵.

Many villages especially in the more remote areas live at or near subsistence level and can usually not contribute any cash to the project. Their main contribution will be labour for transport and construction and collection of local materials such as sand, gravel, stone and wood. Village contributions can come in various forms.

It is important here to reiterate that participation is more than just contributing in terms of labour, materials or cash. This point is taken by Dee Jupps and summarized in her paper on "community participation in rural infrastructure development written for the Bangladesh Second Rural Roads and Markets Improvement and Maintenance Project:

"For many the idea that poor unskilled and uneducated people can contribute anything to development initiatives undertaken on their behalf beyond

Another approach would be to start with community involvement right from the start of the design.

World Bank Participation Sourcebook

their labour and cash is unthinkable. They feel that planning decisions, including site selection and choice of technology, should be left entirely to the technical experts. If participation is embraced at all, it is limited to involvina villages in manual labour and local cost sharing. It is assumed that contributions of cash and physical labour constitute a willingness on the part of the people to participate and indicate a commitment to the development scheme. This, in turn, is assumed to generate a sense of ownership of the facility and collective pride which will ensure its maintenance.

These assumptions have been proved over and over again to be dubious. The fact is people will not value anything which does not

meet their needs. If the location is inconvenient, the service too expensive and inadequate to meet their needs then regardless of whether they were involved in construction or cost sharing, the facility will not be used, will gradually fall into disrepair or will be abandoned altogether. There could have been a number of reasons why they became involved in the construction which may not correlate with the usefulness of the scheme. For example, it may have been regarded as a chance for earning daily wages, albeit minimal, or they may have been coerced by influential leaders ²⁶ ". These words, again, emphasize the importance of involving the communities during the inception of projects.

Dee Jupp Community Participation in Rural Infrastructure Development

ASIST AP is a regional programme of the Employment Intensive Investments Programme (EIIP) of the ILO, concerned with developing and mainstreaming poverty alleviation strategies through sustainable infrastructure development. The programme is implemented through four major fields of operation, viz: accessibility planning, labour-based works technology, small-scale contracting and infrastructure maintenance, thus providing a comprehensive approach to infrastructure development covering all stages from planning and construction to maintenance and operation.

Based in Bangkok, ASIST AP provides a full range of expert support to all stages of the project cycle from formulation, implementation, monitoring to final review and evaluation. These services include activities such as:

- planning, policy development and design of infrastructure programmes,
- influencing public investments in infrastructure towards the greater use of local resources,
- technical and managerial support to project implementation,
 information services,
- Information services,
 preparation of planning and implementation guidelines,
 developing appropriate methods for increased involvement of the
- domestic construction industry in infrastructure works,

 design and conduct of tailor-made training programmes, and
- design and conduct of tanoi-made training programmes, and
 design of appropriate maintenance management systems.

This document forms part of a series of publications from ASIST AP, in its efforts to develop and disseminate general and country specific guidelines, best practices and lessons learned in the context of planning and implementing infrastructure works programmes.

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